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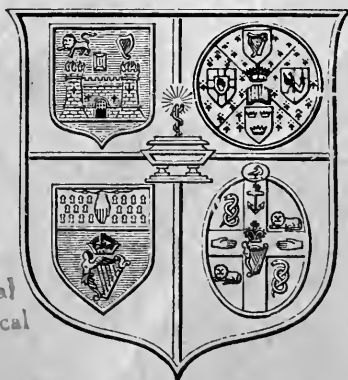
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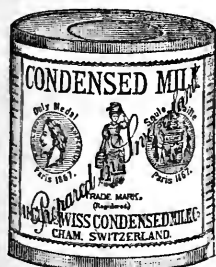
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VOL. XI.—1893.

Edited by WILLIAM THOMSON, M.A., F.R.C.S.,

GENERAL SECRETARY;

Surgeon to the Richmond Hospital, Dublin.

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GREAT BRITAIN.

1. Royal Medical and Chirurgical Society, 20 Hanover-square, London, W.
2. The Edinburgh Medical Journal. Oliver and Boyd.
3. The Retrospect of Medicine. Edited by James Braithwaite. Simpkin, Marshall, and Co.
4. Pharmaceutical Journal.
5. The Lancet.
6. The British Medical Journal.
7. The Journal of Mental Science. London: Churchill.
8. The Glasgow Medical Journal. A. MacDougall.
9. The Medical Press and Circular.
10. Transactions of the Medical and Chirurgical Society. London: Longmans.
11. Transactions of Obstetrical Society London: Longmans.
12. The Practitioner; a Monthly Journal of Therapeutics. Macmillan and Co.
13. The Journal of Anatomy and Physiology. Macmillan.
14. Brain. London: Macmillan & Co.
15. The Bristol Medico-Chirurgical Journal.
16. The Provincial Medical Journal.
17. The British Journal of Dermatology.
18. The Asclepiad.
19. The Medical Chronicle.
20. The Birmingham Medical Review.
21. The Liverpool Medical Journal.
22. Guy's Hospital Reports. Guy's Hosp., London.

CANADA.

23. The Montreal Medical Journal. Richard White. Box 386, P.O., Montreal.

AMERICA.

24. The American Journal of the Medical Sciences. Philadelphia: Henry C. Lea. London: Trübner and Co.
25. The Medical Record. New York: William Wood & Co.
26. Medical News. Philadelphia: Henry C. Lea, Son and Co.
27. The American Journal of Insanity, Utica, N. Y. State Lunatic Asylum.
28. The American Journal of Obstetrics and Diseases of Women and Children. New York: William Wood and Company. London: S. Low, Son, and Marston.
29. The New York Medical Journal. New York and London: D. Appleton & Co.
30. The Medical and Surgical Reporter. Philadelphia: N. A. Randolph, M.D., and Charles W. Dulles, M.D.

AMERICA.—continued.

31. Journal of Cutaneous and Venereal Diseases. New York: D. Appleton & Co.
32. The Times and Register. New York and Philadelphia.
33. Chicago Journal of Nervous and Mental Disease.
34. The St. Louis Medical and Surgical Journal. St. Louis: Frank M. Rumbold and Co.
35. Journal of the American Medical Association. Chicago, Illinois.
36. Index Medicus. George S. Davis. Detroit, Michigan.
37. The Occidental Medical Times. James H. Parkinson, Editor, Sacramento, California.
38. Pacific Medical Journal. 603 Sutter-street, San Francisco: Winslow Anderson, A.M., M.D.
39. Archives of Pediatrics. New York: Baily & Fairchild.

FRANCE.

40. Répertoire de Pharmacie, Archives de Pharmacie, et Journal de Chimie Médicale réunis. Troisième Série. Paris: M. C. Crinon.
41. Gazette Médicale de Paris. Paris: 4, Place Saint-Michel.
42. Journal de Pharmacie et de Chimie &c. Paris: Victor Masson.
43. L'Union Médicale. Paris: Bureau, Rue de la Grange-Batelière.
44. Archives Générales de Médecine. Paris: Asselin.
45. Bulletin del'Académie de Médecine. Paris: G. Masson.
46. Revue de Thérapentique Médico-Chirurgicale. Paris: Masson.
47. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Lunire. Paris: V. Masson.
48. Bulletin Général de Thérapeutique. Médicale et Chirurgicale. Par le Docteur Félix Bricheteau. Paris.
49. Répertoire de Pharmacie. Par M. Eug. Lebaigue. Paris: Rue de la Perle, 11.
50. Gazette des Hôpitaux. Paris: 4, Rue de l'Odéon.
51. Lyon Médical, Organe Officiel de la Société Impériale de Médecine. Lyon: Mégret.
52. Revue des Sciences Médicales en France et à l'étranger. Paris: G. Masson.
53. Gazette Hebdomadaire. Paris: 91, Rue de Lille.

List of Exchange Journals.

FRANCE.—*continued.*

54. Revue de Médecine et Revue de Chirurgie.
55. Revue de Laryngologie, d'Otologie, et de Rhinologie. Paris: Octave Doin.
56. Annales des Maladies des Organes Génito-Urinaires. Paris: 22, Place St. Georges.
57. La Médecine Moderne. Paris.
58. La Presse Médicale, 3 Rue Racine, Paris.

BELGIUM.

59. Bulletin de l'Académie Royale de Médecine de Belgique. Bruxelles: F. Hayez.
60. Annales d'Oculistique. Bruxelles.

GERMANY.

61. Archiv für Gynækologie. Redigirt von Credé und Spiegelberg. Berlin: August Hirschwald.
62. Centralblatt für die medicinischen Wissenschaften. Berlin: August Hirschwald.
63. Jahrbuch für Kinderheilkunde und physische Erziehung. Leipzig: B. G. Teubner.
64. Archiv für pathologische Anatomie und Physiologie, &c. Herausgegeben von R. Virchow. Berlin: G. Reimer.
65. Berliner klinische Wochenschrift. Berlin: Hirschwald.
66. Archiv für klinische Chirurgie. Herausgegeben von Dr. B. von Langenbeck. Berlin: Hirschwald.
67. Archiv für Psychiatrie und Nervenkrankheiten. Berlin: August Hirschwald.
68. Zeitschrift für physiologische Chemie. Herausgegeben von F. Hoppe-Seyler. Strassburg: Karl J. Trübner.
69. Deutsche Medizinal-Zeitung. Herausgegeben von Dr. Julius Grosser. Berlin: Eugen Grosser.
70. Albrecht von Graefe's Archiv für Ophthalmologie. Göttingen: Professor Dr. Th. Leber.

71. Centralblatt für klinische Medicin, und Centralblatt für Gynäkologie. Berlin: Hirschwald.

72. Fortschritte der Medicin, H. Kornfeld, Charité Strasse, 6. Berlin, N. W.

NORWAY.

73. Norsk Magazin for Lægevidenskaben. Udgivet af det medicinske Selskab i Christiania. Christiania: Paa Th. Steen, Forlag.

SWEDEN.

74. Svenska Läkaresällskapet. Stockholm.

75. Hygiea, medicinsk och farmaceutisk Månads-skrift. Stockholm: P. A. Norstedt och Söners förlag.

76. Nordiskt medicinskt Arkiv. Redigeradt af Dr. Axel Key, Prof. i Patolog. Anat. i Stockholm. Stockholm: Samson och Wallin.

77. Upsala Läkareförenings Förhandlingar. Upsala: Ed. Berling.

DENMARK.

78. Hospitals-Tidende. Optegnesler af praktisk Lægekunst fra Ind-og Udlandet. Kjöbenhavn: Jacob Lund. London: Asher & Co.

79. Bibliothek for Læger. Kjöbenhavn: C. A. Reitzels Forlag.

80. Ugeskrift for Læger. Kjöbenhavn: C. A. Reitzels Forlag.

ITALY.

81. Lo Sperimentale, Giornale Critico di Medicina e Chirurgia. Direttore Prof. C. C. M. Butalini. 35, Via Alfani Florence.

AUSTRALASIA.

82. The Australasian Medical Gazette. Sydney: L. Bruck.

INDIA.

83. The Indian Medico-Chirurgical Review. Bombay.

BOOKS, PAMPHLETS, AND PERIODICALS RECEIVED—FEB., 1894.

1. Bulletin bibliographique de la Librairie Française. Septième Année. No. 4. Decembre, 1893. Paris: Boulevard St. Germain, 117.
2. The Medical Week. Vol. I. No. 51. Paris, Friday, December 22, 1893.
3. Charles Letts & Co.'s A. B. C. Medical Diary and Visiting List. 1894. London.
4. A New Pathology and Treatment of Nervous Catarrh. By Seth Scott Bishop, M.D. Chicago. 1893. Reprint. Pp. 16.
5. Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Ninety-fifth Annual Session, held at Baltimore, Maryland, April, 1893.
6. Medicated Baths in the Treatment of Skin Diseases. By Leslie Phillips, M.D. London: H. K. Lewis. 1893. 8vo. Pp. 103.
7. The After-Treatment of Cases of Abdominal Section. By Christopher Martin, M.B. (Edin.), F.R.C.S. (Eng.). London: Simpkin, Marshall, Hamilton, Kent & Co. 1894. Pp. 48.
8. Spinal Curvature. By C. G. Gumpel, Orthopædist. London. 1892. Pp. 16.
9. Indian Medical Gazette. Vol. XXVIII. No. 12. Calcutta, December, 1893.
10. Transactions of the Pathological Society of London. Vol. XLIV. London: Smith, Elder & Co. 1893. 8vo. Pp. 242.
11. The Grocery World and Fruit Trade Bulletin. Vol. XVI. No. 25. Philadelphia, December 23, 1893.
12. The Post-Graduate. Vol. VIII. Nos. 10 and 11. October and November 1893. New York.
13. Archives Cliniques de Bordeaux. Deuxième Année. Nos. 10, 11, et 12. Octobre, Novembre, et Decembre, 1893. Bordeaux: Feret et fils.
14. Annales de la Policlinique de Bordeaux. Tome III., Fasc. 3 et 4. No. 17 et 18. Novembre, 1893, et Janvier, 1894. Bordeaux: Feret et fils.
15. Blätter für klinische Hydrotherapie. III. Jahrgang. Nr. 11 and 12. November and December, 1893. IV. Jahrgang. Nr. 1. Jänner, 1894. Wien.
16. Revue Générale de Médecine, de Chirurgie, et d'Obstétrique. Deuxième Année. 1893. Nos. 43, 44, 45, 46, 47, 48, 49, 50, 51, 52. Paris: O. Doin.
17. Dominion Medical Monthly. Vol. I. No. 5. November, 1893. Toronto: Medical Publishing Co.
18. Transactions of the Association of American Physicians. Vol. VIII. Philadelphia. 1893. 8vo. Pp. 402.
19. Transactions of the American Gynecological Society. Vol. XVIII. For the year 1893. Philadelphia: Wm. J. Dornan. 1893. 8vo. Pp. 542.
20. Enterorrhaphy: its history, technique, and present status. By N. Senn, M.D., Ph.D., LL.D. Reprint. Pp. 23. 1893.
21. The Retrospect of Medicine. Edited by James Braithwaite, M.D. Lond. Vol. CVIII. July-December, 1893. London: Simpkin, Marshall, Hamilton, Kent & Co. 8vo. Pp. 412.
22. La Presse Médicale. 6 et 13 Janvier, 1894. Paris: Georges Carré.
23. The Medical Magazine. Vol. II. No. 7. January, 1894. London: Southwood, Smith & Co.
24. Science Siftings. Vol. V. No. 117. Saturday, Jan. 13, 1894. London: Gutenberg Press.
25. Bulletin de l'Académie Royale de Médecine de Belgique. Quatrième Série. Tome VII. No. 10. Année 1893. Bruxelles: F. Hayez. 1893. 8vo.
26. On Gout as a Peripheral Neuritis. By Willoughby Francis Wade, F.R.C.P. Lond., &c. London: Simpkin, Marshall, Hamilton, Kent & Co. 1893. Pp. 59.
27. The Medical Pioneer. Vol. II. No. 4. January, 1894.
28. The Use of Antiseptics in Midwifery. By Robert Boxall, M.D. Cantab. London: H. K. Lewis. 1894. 8vo. Pp. 35.

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29. *An Introduction to Midwifery.* By Archibald Donald, M.A., M.D., C.M. (Edin.), M.R.C.P. (Lond.). London : Charles Griffin & Co. 1894. 8vo. Pp. 188.
30. *Index-Catalogue of the Library of the Surgeon-General's Office, United States Office.* Vol. XIV. Washington: Government Printing Office. 1893. Quarto. Pp. 1,016.
31. *Transactions of the American Surgical Association.* Vol. XI. 1893. Philadelphia: Wm. J. Dornan. 1893. 8vo. Pp. 372.
32. *Les Nouveaux Remèdes.* Dixième Année. No. 1. Paris: O. Doin. 1894.
33. *The Pharmaceutical Journal of Australasia.* Vol. VI. No. 11. November 30, 1893.
34. *Il Policlinico.* Anno I. Num. 1 e 2. Roma. 15-31 Dicembre, 1893. Num. 3. 15 Gennaio, 1894. Roma: Società editrice Dante Alighieri.
35. *The Canadian Practitioner.* Vol. XVIII. No. 12. December, 1893. Toronto: The J. E. Bryant Co.
36. *Gaillard's Medical Journal.* Vol. LVIII. No. 1. January, 1894. New York.
37. *Transactions of the American Ophthalmological Society.* Twenty-ninth Annual Meeting. New London, Conn. 1893. Hartford. Pp. 152.
38. *The Open-Air Treatment of Phthisis.* By W. Bezly Thorne, M.D., M.R.C.P. London: J. & A. Churchill. 1894. Pp. 31.
39. *The Technique of Post-mortem Examination.* By Ludwig Hektoen, M.D. Chicago: The W. T. Keener Co. 1894. 8vo. Pp. 172.
40. *Electricity in Diseases of Women and Obstetrics.* By Franklin H. Martin, M.D. Chicago: The W. T. Keener Co. 1893. 8vo. Pp. 278.
41. *Stricture of the Urethra.* By G. Frank Lydston, M.D. Chicago: The W. T. Keener Co. 1893. 8vo. Pp. 334.
42. *Women: their probable place and prospects in the Twentieth Century.* By Sir Dyce Duckworth, M.D., LL.D. Glasgow: James Maclehose & Sons. 1894. Pp. 31.
43. *Atlas of Clinical Medicine.* By Byrom Bramwell, M.D. Vol. II. Part 3. Edinburgh: T. & A. Constable. 1893.
44. *The Journal of the British Dental Association.* Vol. XV. No. 1. January 15, 1894. London: Baillière, Tindall & Cox.
45. *Infectious Diseases Notification and Prevention.* By Louis C. Parkes, M.D. Lond., D.P.H. London: H. K. Lewis. 1894. Pp. 185.
46. *On Common Neuroses.* By James Frederic Goodhart, M.D. Aberd., F.R.C.P. London: H. K. Lewis. 1894. Second Edition. Crown 8vo. Pp. 136.
47. *Headache and other morbid Cephalic Sensations.* By Harry Campbell, M.D., B.S. Lond. London: H. K. Lewis. 1894. Royal 8vo. Pp. 410.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

FEBRUARY 1, 1894.

PART I.

ORIGINAL COMMUNICATIONS.

ART. III.—*Operative Treatment of such Herniæ as appear the Result of Congenital Defect of the Linea Alba, or as the Outcome Laparotomy.** By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

THE question which I desire to elicit your opinion upon, is one of great moment, not alone for the specialist, but also for workers in every department of surgery—I allude to the operative treatment of such herniæ as appear as a result of congenital defects in the linea alba, or as the outcome of laparotomy. The cases which I shall bring under your notice illustrate the course followed by both varieties prior to and after operation.

Case showing the result of Neglected Fatty Hernia from Sub-peritoneal Tissue (Lücke).

Mrs. H., aged fifty-one, came under my care on the 12th of January, 1890. For many years she had noticed a small nodule under the skin, a little above the umbilicus. Suddenly, during the lifting of a weight, she felt something giving way in the abdomen, and soon after was obliged to lie down owing to abdominal pain. On examining the neighbourhood of the original nodule, she found a swelling the size of a small orange. This soon lessened in bulk, but recurring enlargements took place, until distressed by continual protrusion she sought surgical advice, and was placed under my care, when I found a rounded tumour, dull on percussion, irregular in outline, and not reducible. Diagnosing omental hernia, I

* Read before the Obstetrical Section of the Royal Academy of Medicine in Ireland, on Friday, November 24, 1893. [For the discussion on this paper, see page 166.]

proceeded to lay open the sac after the manner I shall detail hereafter, and found not only a large omental hernia, as depicted in Fig. 1, but also a knuckle of small intestine. Replacing the loop of gut, I applied 8 or 10 fine silk ligatures to the root of the omental protrusion, placed a flat sponge underneath it, and removed a great mass of extremely dark-coloured and almost gangrenous omentum. I need not detail the remaining steps of the operation, suffice it to say the patient made an excellent recovery, all the unburied sutures being removed on the eighth day.

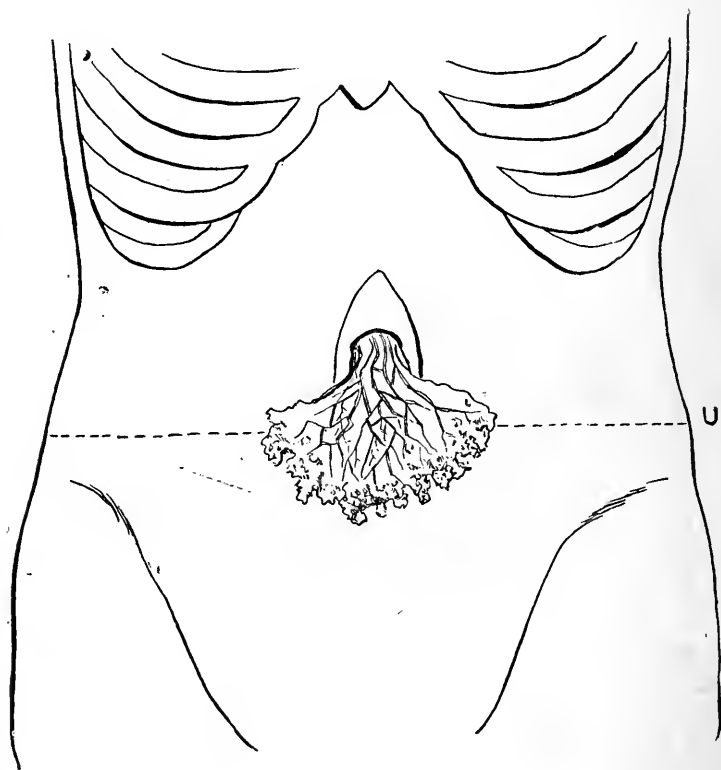


Fig. 1.

In this case I have no doubt but that removal of the primary fatty nodule which I found adherent to the outer side of the protruded sac, would have prevented the development of the dangerous condition which preceded operation, especially if the small opening had been closed by a buried suture or by silk-worm gut suture passed through the skin, and deeply through the revived aponeurotic border of the ring.

Case of Enormous Umbilical Hernia with Strangulated Gut and almost Gangrenous Omentum.

Helen E. was admitted into St. Vincent's Hospital on the 8th of March, 1891, in great distress owing to a very large umbilical hernia which could be only partially reduced, and therefore no truss could be worn at the time of admission. The tumour was as large as a foetal head, and presented as in Fig. 2. As no time was to be lost, owing to symptoms of strangulation being present, I incised the skin on the left side along

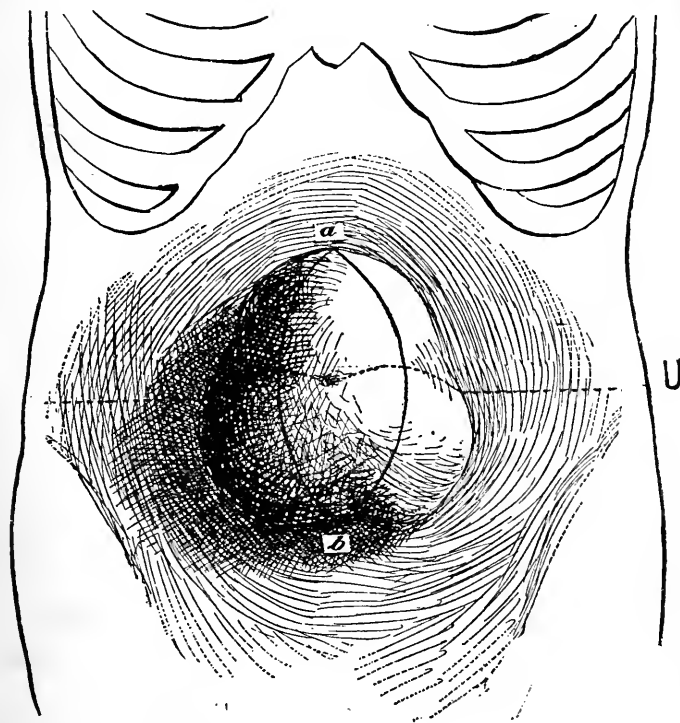


Fig. 2.

the line A B, and reaching neck of sac, cleared it for a short distance, then with strong, long-handled scissors I cut clean through the tissues up and down to the ends of the skin incision. Checking hæmorrhage, which was sharp, with clip forceps, I divided the skin and all the tissues on the right side quickly with the scissors, thus freeing the entire neck. Opening the sac on the left side I found numerous firm adhesions of the omentum thereto. I did not delay to break these down or double ligature

them, but unfolding the membrane as in Fig. 1, we came upon an almost gangrenous piece of intestine of considerable size. This was adherent to the sac and the omentum, and was irreducible. Most of the adhesions broke down under sponge pressure, and a slight section of the ring outside the sac allowed stretching of the neck and return of the bowel. Three circumstances induced me in this case to remove the omentum—1st. The numerous adhesions would require more ligaturing than the stump. 2nd. The abdomen was already as full as it could well be. 3rd. The protruded mass looked in a state of low inflammation. Applying multiple ligatures I resected the omentum, as in the last case, and dropped it into the abdomen and completed the operation.

The case did well, temperature never going above 99.4°. On the 13th day, she left the hospital perfectly well, and since that time she has remained in perfect health.

Here prompt operation averted imminent danger of death, and the removal of a great mass of omentum lessened the intra-abdominal tension, while clearing the edges of the ring, applying a purse-string suture to the neck of sac, an interrupted suture to the aponeurosis, and deep supporting sutures through the skin, fat, and abdominal fasciæ, resulted in a permanent cure of this formidable trouble.

Case of Ventral Hernia following Laparotomy.

B. M'G., aged twenty-seven, was sent to me from Louth, labelled urgent. I must say I never saw any urgency about the case, and the details given by the patient as to the origin of her trouble only proved how little we laparotomists are appreciated by the ordinary public. The man who evuls a toe-nail, or passes a Eustachian probe, is a genius in the estimation of the ordinary run of observers, while if we safely guide a case through the dangerous stages of a prolonged laparotomy, and the patient afterwards gets a curable though enormous hernia, all the credit of a brilliant performance vanishes, and she calmly tells us, or more likely some one else, "The operation ruined me." You know the value to set on such statements; so do I. This was such a case, and I approached it with some concern, especially as Doctors Horne, Smith, and myself concluded that a hydrops peritonei was present, and that the patient was not over-vigorous.

I operated in this case on Nov. 14, 1893, assisted by Dr. Smith. Reaching the neck of the sac at one point, I attempted to follow it round as in Cases I. and II. I failed to do this owing to a sacculation, as shown in Fig. 3, and was, therefore, obliged to dissect out each sac separately. After examining the interior of the sac I passed a purse-string suture round its neck, and tied it firmly; section of the sac half an inch above this suture was rapidly carried out. While this was being done Dr. Smith

held sponges firmly against the cavities from which I had removed the sacculi. I now passed six silk sutures through the firm and freshened aponeurotic ring, as in Fig 5, drawing the edges well over the fulness produced by the purse-string suture of the peritoneum. These were cut short, and I applied myself to checking bleeding from the subcutaneous tissues. Owing to their great vascularity—oozing being copious and

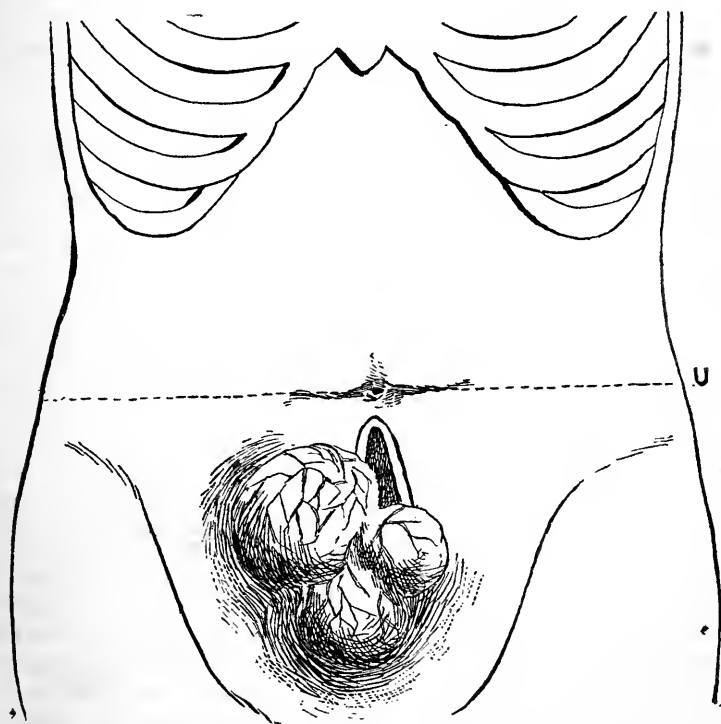


Fig. 3.

continuous—I was obliged to pass a double thread from the extreme limit of the dissection on one side, and bring it along under the tissues of the floor of the incision and out on the opposite side, so that when I tied down a pledget of gauze on each side the entire centre of the cavity from which I removed the hernial sac was obliterated. This deep supporting suture and the skin sutures, applied as I shall hereafter describe, effectually checked the hæmorrhage and completed the operation. A very free discharge of clear serum, amounting to more than half a gallon, took place from the peritoneum when the sac was opened.

The temperature chart of this case is before you, and the notes from day to day. The first dressing was removed on eighth day, and was found perfectly dry, the wound being firmly healed. Of course as yet this cannot be counted a cure; it is but a first step in that direction.

I must ask your forgiveness for detailing this case at such length, but the plate which I present to you is an accurate drawing of the state of things found on dissecting out the sac, part of which I have shown to the Academy. My colleague, Dr. Smith, and Dr. Mc'Loughlin, of Boston, can vouch for their accuracy as well as for the description of the operation as given above.

Now my reading of this case may throw light on the causation of an affection which unfortunately follows operations carried out with great care, and conducted by most competent hands. There are some who would relegate such cases to a museum for surgical impossibilities. They would have us believe that the occurrence of hernia after section of the abdominal wall is fitting recompense for the imperfect application of antiseptic principles. To my mind we can trace to one cause the occurrence of hernia in these cases. In the hernia following the projection of sub-peritoneal fat the middle stratum of the abdominal wall was weakened by the hypertrophy of the fatty tissue, which found its way through at the point of perforation of a small vessel. In the umbilical hernia there never was a complete closure of the middle stratum, while in the last case the accompanying plates show that the middle stratum alone was deficient. The peritoneum was firm along the line of section, so was the skin. The aponeurosis had been drawn aside owing to the action of the abdominal muscles, and was found not closely encircling the neck of the sac, but fully one and a half inches on the left, and two inches on the right from that structure, while above and below the protrusion dense fibroid tissue marked the line of repair.

I do not blind myself to the fact that this patient developed a hydrops peritonei, and that this trouble may have acted as a determining cause in this case; but no amount of dropsy could overcome the resistance of the tissues where the three layers of the abdominal wall are united.

This want of union of the mid-stratum, made up of the elastic fascia of Scarpa and the aponeurosis—formed by the fusion of the tendons of the external oblique, internal oblique, and transversalis—was the only pathological condition present in all these cases. I

am satisfied we know the explanation in Nos. 1 and 2. I shall now endeavour to explain its occurrence in No. 3, and propose a remedy.

There is a disposition to complete operations on the abdomen by passing a row of deep sutures embracing the entire thickness of the abdominal wall, and intermediate superficial sutures usually securing skin only.

(a) How often do we in passing the deep sutures revert to the fact, that there is a great tendency to retraction on the part of the essential constituents of a sound abdominal wall. My notion is that many cases depend for complete restoration of the abdominal wall on contraction of a very extensive cicatricial deposit between the widely separated lips of the aponeurotic opening. The failure of one or two sutures to engage a considerable mass of the mid-stratum of the abdominal wall would account for many of the protrusions which follow laparotomy.

(b) In the conduct of abdominal section there is a tendency to use ordinary catch forceps for the support of the peritoneum. I have noticed that many of these bite very hard, and seriously reduce the vitality of tissues subjected to such vigorous pressure. The parts supported by the forceps are drawn at times well up between the layers of the abdominal wall, and fixed there by the sutures. During repair these points become the seat of vigorous tissue change, with the object of remedying the ill effects of over-pressure; if lymph accumulates it must separate the tissues, and as the

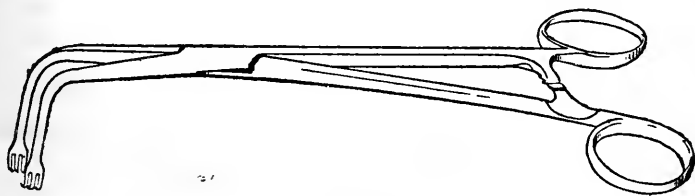


Fig. 4.

peritoneum unites rapidly behind the effusion the fluid presses forward and separates those layers which are slow of healing, the aponeurosis being last of all to firmly unite, the tendency is to thus cause a faulty union. To avoid this I have used the forceps represented in Fig. 4; they are so bent that they lie flat on the abdomen, and do not interfere with the further steps of the operation.

(c) Occasionally, too, unless all the layers of the abdomen are drawn together, a hæmorrhage occurs during reaction, the skin-wound is closed accurately, exudation has glued the peritoneal surfaces together, and the blood remains between the layers of muscle or aponeurosis, as the case may be, preventing early union, and any vigorous effort causes rupture.

(d) Again, low vitality permits lymph exudation to break down, or possibly direct infection sets up a circumscribed suppuration. This prevents the edges of the mid-stratum uniting, and hernia follows.

There are thus many causes of want of union of this essential layer of the abdominal wall, and I would place them in order of importance—

1. Failure to engage the different layers of this stratum sufficiently in the sutures.
2. Interposition of contused peritoneum.
3. Hæmatoma not becoming soundly organised.
4. Suppuration from inherent or extrinsic causes.

The remedy for this is to suture the abdomen in all laparotomies as we do for hernias, to obliterate all cavities in which

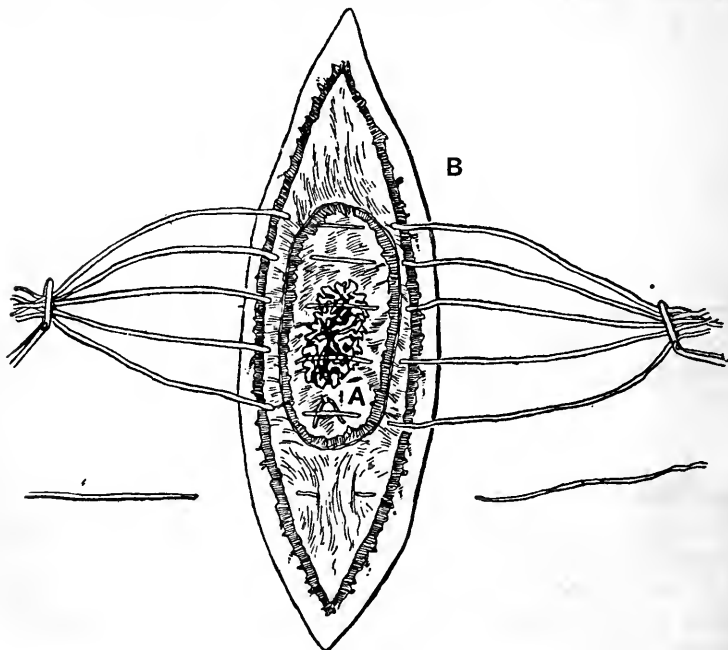


Fig. 5.

blood or serum could collect, and to avoid contusing the peritoneum by using catch forceps, such as I suggest, with sharp points.

The steps of the operation, as I believe it should be conducted, are—Incision of skin on one side, as in Fig. 1; isolation of the neck of the sac along this side, then undermining not only the skin, but all the tissues on the other side of the neck, making it possible to cut cleanly through everything down to the neck of the sac with strong scissors with long handles. This done, and being satisfied by opening the sac that no omentum or bowel remains in it, a Hagedorn's needle is carried round in the sub-peritoneal tissue, like a purse-string, as in Fig. 5 A. This being drawn and tied, numerous sutures carried with the same needle through the aponeurosis, as at Fig. 5 B, close the wound over the mouth of the purse after cutting away the sac a quarter of an inch or so above that ligature.

Skin sutures passing deeply, and taking up the floor of the wound, are now applied and knotted, and the operation thus completed. The needles and holder (Pozzi's) required for this are

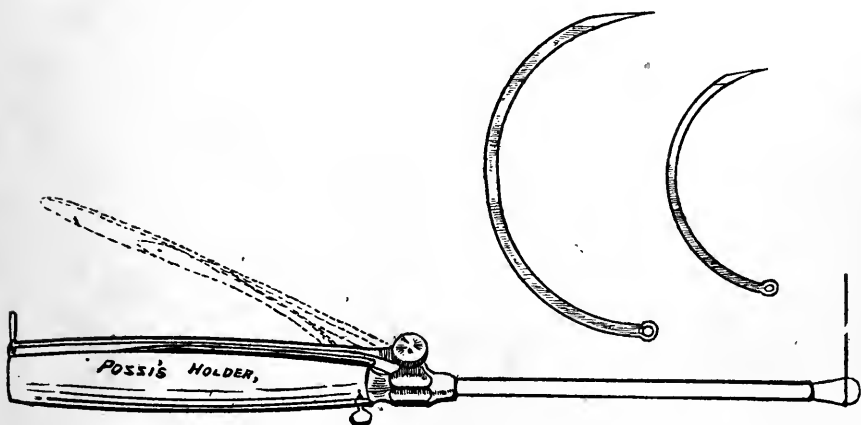


Fig. 6.

represented in Fig. 6. After opening the sac to examine its interior, a sponge, or a holder is held in the mouth of the sac to prevent protrusion of the intestines.

If apology be needed for bringing this subject before you, I think the following extracts are ample proof of the neglect of this operation :—

Macready ("A Treatise on Ruptures," 1893).—The operation consists in exposing the tumour, dividing it carefully to see whether it contains a peritoneal sac, and, if so, dealing with the sac either by excision or Macewen's method.

Keen and White ("American Text-book of Surgery," 1893). The radical cure of umbilical hernia is seldom undertaken because of the unsuitability of the subject of it for operation. Should an operation be performed, it should be done, if possible, "without opening the sac." *This book recommends a drainage tube to be left in—Where?*

Treves' "Operative Surgery" concludes a very accurate description of the operation by saying, and rightly so, that no drainage tube is required; but, even in his description there is one defect, and it is the instruction to excise the whole sac down to the aponeurosis. Now, if he means to apply this to hernias of recent origin, whether umbilical or in the linea alba after laparotomy, he will sooner or later meet with serious mishaps; for the moment you cut the neck of a recent hernial sac, retraction of the peritoneum takes place, and leaves a patch of the anterior abdominal wall devoid of serous covering, and this, we all know, is not a condition to be eagerly sought after. In these cases suturing, as in laparotomy, is not sufficient. Apposition of the different layers of the abdominal wall is necessary.

How soon books are out of date! The great Encyclopædia of Ashhurst contains only the elaborate details of Woods' *subcutaneous wire suture*. Now, the specimen which I here exhibit should be a warning to those who still cling to the ancient methods of blind surgery. This bottle contains the result of two operations carried out by a distinguished surgeon for the relief of hernia by the subcutaneous wire suture. In both attempts the wire only engaged the anterior wall of the sac and so protrusion of the gut took place behind them. Their complete removal by the open operation, and with them the sac of an almost gangrenous hernia has removed a serious danger which was in the case always present, as, owing to the presence of the wires, no truss could be worn.

The patient to this day is not aware of the danger to which blind surgery exposed him. The operator is more than thankful for the clean sweep which I had the pleasure of making of his handiwork.

ART. IV.—*Colectomy for Adhesion of Cæcum to old Ovarian Pedicle and Tubercular Appendix.*^a By ALFRED J. SMITH, M.B.; Ex-Assistant Master, Rotunda Lying-in Hospital; Examiner in Midwifery, Royal University; Professor of Midwifery, C.U.I.; Gynæcologist, St. Vincent's Hospital; Fellow, British Gynæcological Society.

I ASK your indulgence whilst I read for you notes of what was to me an extremely interesting case, in the hope that it may present some points for discussion and of interest to the members of this Section of the Royal Academy of Medicine.

CASE.—A young married woman, named Mrs. G., aged twenty-four, was sent up from Westport to my gynæcological wards in St. Vincent's Hospital towards the end of September, 1892. She had been then married four years, and had three children, each at full term and healthy. About a month after the first confinement she complained of pain in the right inguinal region, referred to a point midway between the umbilicus and the anterior superior spine of the ilium. Her local physician exhausted all the usual remedies for obtaining relief—such as poultices, blisters, sedatives, hot hip-baths, &c.—without any permanent benefit; the pain for the twelve months before her admission became so intense that she was unable to perform her household duties, and she had to take to her bed as an invalid. She suffered also from heavy floodings during her menstrual period, the duration being about 10 days, with a gradually-diminishing interval between the periods.

Examination.—External genitals normal in development, vagina normal, uterus anteflexed and displaced towards the left, movable, not tender on pressure; length, 7·5 cm. The right broad ligament contained a Fallopian tube, slightly tender on pressure, and it could be easily felt as a tolerably firm cord. The right ovary felt very large—the size of a billiard ball—and was exquisitely tender on pressure, the patient calling out and attempting to jump off the couch each time the ovary was pressed. The left ovary and tube felt normal; no tenderness. I determined to operate, and placed the patient on Trendelenburg's table and made a two-inch incision; the diseased right ovary came easily into view. This I removed along with the Fallopian tube quite close to the uterus, using strong silk and transfixing the pedicle. The left ovary was examined; it looked and felt normal, and so was preserved. The right ovary was examined by Dr. Patteson, who described it as being

^a Read before the Obstetrical Section of the Royal Academy of Medicine in Ireland, on Friday, December 23, 1893.

distended by a great number of small retentive cysts. In fact the ovary was a specimen of *Hydrops folliculorum*—I showed it at this Section of the Academy—and it is preserved in the museum of the Royal University—a line drawing of which is here shown (Fig. 1). Her recovery from the

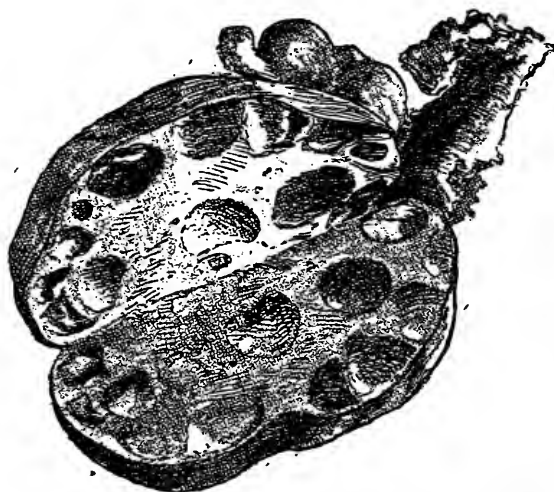


Fig. 1.—Line drawing of ovary preserved in Museum of Royal University, showing the cystic cavities.

operation was rapid and uninterrupted; the temperature and pulse never exceeded the normal. She complained of great abdominal pain, commencing eight hours after the operation and extending into the night. The patient called out several times for relief, so intense was the suffering. I ordered $\frac{1}{4}$ gr. morphia hypodermically, which only gave temporary relief; the pains ceased after the discharge of some blood from the uterus during the next day. Bowels moved by five grains of calomel on the third day after operation. Incision stitches removed on the eighth day; union good. Patient left for the country, relieved from her suffering. Shortly after her return to the country the old pain in the right inguinal region returned; this greatly distressed her, and she begged of me in many letters to do something for her. At first I was of opinion that the pain was perhaps exaggerated, and wrote encouraging her in the belief that it would wear away. She was not to be deceived, for in the beginning of May in this year, six months after the first operation, she again visited my wards in St. Vincent's, and implored me to operate, the pain being quite intolerable.

I made a careful bi-manual examination, and found that the uterus was normal as to position; the left ovary had become greatly enlarged;

the right broad ligament, or what remained of it, felt thickened, and was decidedly tender on pressure. Accordingly, on May 24th, 1893, having hoisted the patient on Trendelenburg's table, I opened the abdomen in the track of the old incision; there were no adhesions to break down, the back of the incision being quite free. The intestines did not fall away, and could not be pressed aside easily with a sponge. I found the cæcum had become adherent to the old pedicle by a very dense and intimate adhesion. The left ovary was larger than a good-sized hen's egg and felt cystic. I determined to remove it quite close to the uterus.

Now, what was to be done with the adhesion of intestine to pedicle? Obviously to separate it; but such a procedure required a resection of the intestine. The patient's condition was too low for such a serious operation, and Mr. M'Ardle agreed with me that such an operation, requiring a prolonged exposure of the peritoneum, would militate greatly against her chance of recovery. We hoped that the anæmic condition of the uterus brought about by the removal of both tubes and ovaries would starve the adhesion, and perhaps lead to its atrophy. We, therefore, reluctantly closed the abdominal incision. I showed this ovary at the May meeting of this Section of the Academy. It had undergone the same degeneration as the right ovary. The recovery from the operation was good; no rise of temperature or pulse; the bowels moved the third day; and the stitches were removed on the eighth day, union good.

After the second operation in May it was hoped that the intolerable pain would be benefited. Such was not the case. At first there was temporary relief, but soon the old dragging pain returned with renewed intensity, specially at night, and the patient was confined to her bed, a burden to herself and her family. Nothing was left to be done except to separate the adhesion.

I again admitted her to St. Vincent's Hospital in the second week of November last and made a careful bi-manual examination. The uterus was still normal in position; the right pedicle, with its adherent intestine, could be easily felt as a thickened indefinite mass; it was distinctly tender. Nothing calling for note was felt on examining the left pedicle. I inverted the patient on Trendelenburg's table and opened the abdomen a little to the right of the mesial line. There was a slight omental adhesion along the track of the old incision. Before I could put my fingers into the pelvic cavity I had to draw aside the omentum and the small intestines—they had become anchored to the pelvic organs by fine

adhesions. There was some difficulty in getting the adherent pedicle well into view, but eventually it was brought well up to the abdominal incision (Fig. 2). A narrow sponge held by an American forceps was placed

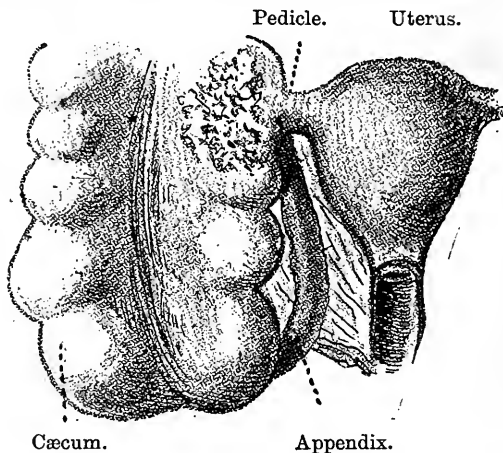


Fig. 2.—Showing relation of adhesion (diagrammatic). The pedicle is shown much too long.

under the arch formed by the adhesion; the intestines were protected by sponges wrung out of a warm saline solution. The pedicle and cæcum were now held tense by Mr. M'Ardle whilst I separated the adhesion. To our surprise pus welled up; this was mopped up with moist corrosive wool, and the separating process continued, revealing an extensive ulcerating cavity, formed by the end of the old pedicle, a portion of the wall of the cæcum, and the vermiform appendix. I carefully disinfected the ulcerating surfaces with corrosive sublimate solution 1 in 1,000, and proceeded to deal with each affected portion in turn. The pedicle was short, quite close to the uterus; it was swollen to the size of the last phalanx of the thumb. Many large veins could be seen around its border; they looked like hæmorrhoids, and concealed the ulcerating surface like a monk's cowl. On unfolding the cowl the old silk ligature was found lying quite loose, and apparently unchanged. [Specimen here shown.] The substance of the stump was very rotten, and gave way easily on the least tension. I transfixed it with a stout silk ligature and tied cautiously, and then cut away the ulcerating surface. I ligatured the vessels separately.

The vermiform appendix was next treated. Its behaviour was decidedly interesting—it was quite turgid like a semi-erect penis, and beat regularly, the rhythm of the beat synchronised with the pulse. Its crown or apex was eaten away by an ulcer of tubercular character, and its stem

greatly thickened (Fig. 3). The appendix was now held upright whilst I made two oblique incisions through its peritoneal covering, then peeled the peritoneal layer back, as one does the prepuce in circumcision, and amputated the central portion. The tops of the two flaps were next inverted and brought together by two No. 4 silk sutures (as in diagram), The ulcer on the cæcum was the size of a two-shilling piece, with under-

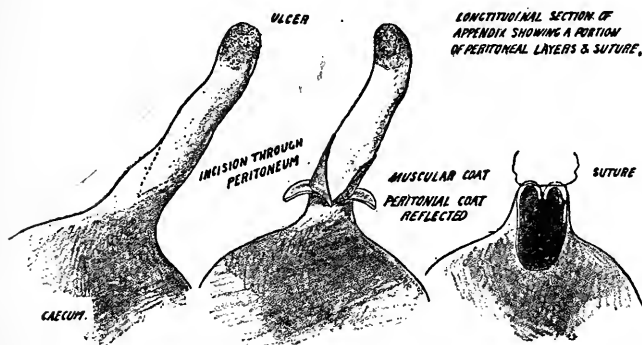


Fig. 3.

mined edges; it was tubercular; its base was slit across to find its extent. and it was found to penetrate as far as the submucous tissue. The intestine was held up by Mr. M'Ardle, and the entire ulcerating surface was snipped off with a scissors, leaving healthy tissue on all sides. The submucous tissue was brought together by a purse-string suture (see diagrams Fig. 4); then the muscular layers by interrupted (No. 4) silk suture, taking in the edge of the peritoneum (see diagram); and, finally, the peritoneum by Lembert's sutures (see diagram); the pelvis was dried and a drainage-tube inserted. The operation, now complete, was performed under 60 minutes.

On recovering from the ether very excessive and persistent vomiting set in, which was so distressing and accompanied by such great abdominal pain that, contrary to my usual practice in abdominal sections, I was compelled to administer $\frac{1}{4}$ gr. of morphia hypodermically, fearing that the exertion and strain of vomiting might do some damage. About three hours after the operation it was noticed that the temperature was 97° F., pulse 110, and the dressing was soaked with blood. I dressed the case and aspirated out of the drainage-tube about a tablespoonful of very dark blood. I hoped that this dark-coloured discharge pointed to a cessation of the hæmorrhage, and I gave orders for the pulse and temperature to be taken every half hour, and the dressing to be watched. The patient was under morphia, but on the effects passing off vomiting again returned about 9 o'clock p.m. I happened to be present, and noticed the

patient got very pale; pulse 120; temperature subnormal. She complained of severe pain in the abdomen and the sacral region. Her appearance showed much distress. I considered the pedicle ligature must have slipped, so telephoned to Mr. M'Ardle, who kindly came at once. Both of us took extraordinary care to render our hands thoroughly aseptic. The patient was too weak to be removed from the bed,

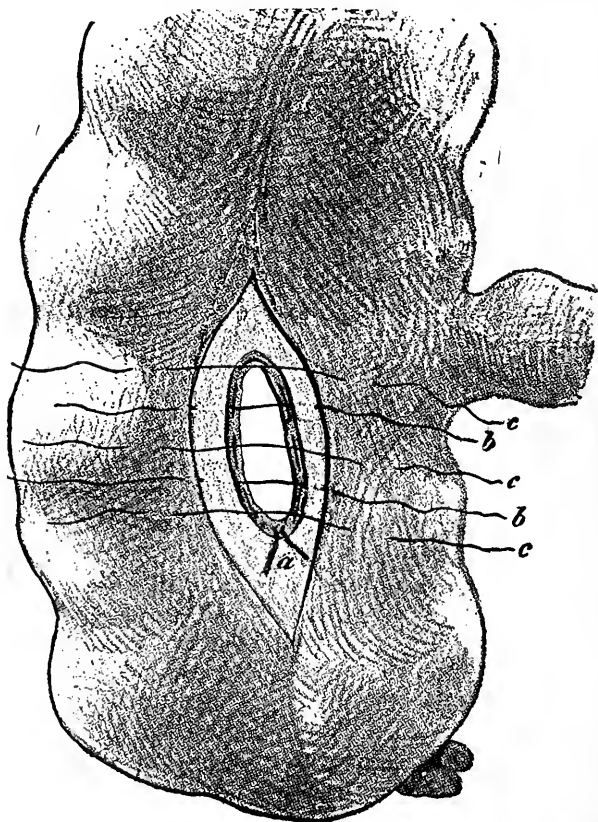


Fig. 4.—*a*. Purse-string; *b*. Intermediate, taking in edge of peritoneum; *c*. Lembert's.

so, with the aid of candles held by nurses, I reopened the abdomen. Blood welled up, just like the hæmorrhage in a ruptured tubal pregnancy. Two fingers slipped down to right side of uterus engaged all the tissues, and effectually checked the hæmorrhage while the large blood-clots were rapidly removed; we then saw that the silk ligature had cut through the rotten pedicle and was hanging on to a shred. How were we to stop the hæmorrhage—there was no pedicle

left? We accomplished it by transfixing part of the uterine wall with a stout silk ligature, tying in two bundles; this controlled the hæmorrhage. For extra safety separate ligatures were put on the vessels. I took the opportunity of examining the intestinal suture, and found the suture track well glazed. I then flushed the abdomen with a warm saline solution and left in a drainage-tube; the excess of saline fluid was not aspirated—it was left to be absorbed by the peritoneum, the anæmia of the patient was so great. Again, on recovering from the ether, vomiting set in; drop doses of tincture of iodine given in a teaspoonful of hot water stopped the nausea at once. I had preparations made to wash out the stomach in case the vomiting continued. The patient's recovery was

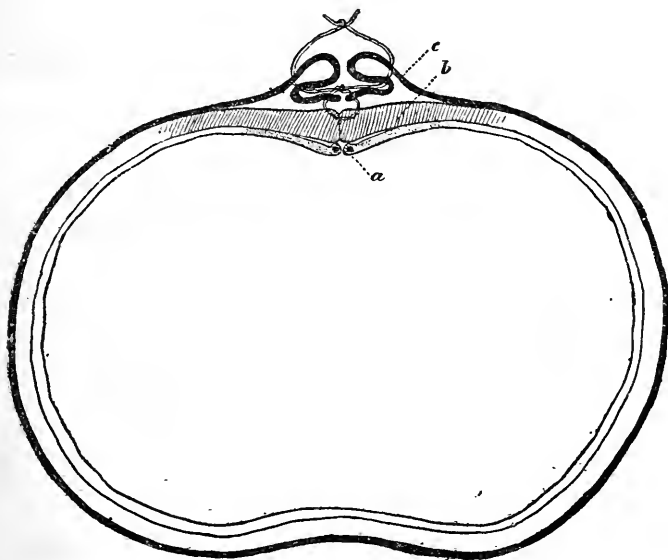


Fig. 5.—Showing suture in section (diagrammatic).

a, Sub-mucous tissue; *b*, Muscular layer; *c*, Peritoneum (suture partially fixed).

extraordinarily rapid; the pulse, which was uncountable after the operation, gradually became stronger and stronger. I was able to remove the drainage-tube on the 4th day. Bowels moved 48 hours after the operation by three grains of calomel, followed by a seidlitz powder and turpentine enema.

Her recovery was uneventful, and was remarkably afebrile. The pains are all gone. All the incision stitches were removed on the 8th day, except the suture in the drainage-tube track, which was taken out on the 10th day; union perfect.

It would be ungenerous on my part did I not acknowledge the skilled assistance of my colleague, Surgeon M'Ardle; his intimate knowledge of intestinal surgery was most valuable; his advice was generously given, and the success of the case is in no small measure due to him.

What was the cause of the pain—I believe now that there was originally a tubercular deposit in the appendix; a low form of inflammation was set up, and it became adherent to the cæcum, infecting it; its subsequent adhesion to the pedicle stump was a mere accident. Critically, I believe this to be the case, and the severe pain suffered by the patient was the same in position, intensity, and character as that for which she was originally operated on; and that the coincidence of an enlarged and painful ovary, accompanied by severe menstrual floodings, caused the condition of the appendix to be overlooked.

I beg to call attention to the fact that this case illustrates—

1st. The value of drainage.

2nd. The rapidity of glazing after suture of the intestine.

3rd. The rapidity of suture by the purse-string and Lembert's method.

4th. How, even after very copious hæmorrhage, death may be arrested by prompt treatment.

And 5th. The necessity for careful examination of the vermiform appendix in cases of persistent right side pain.

ART. V.—*Dilatation of the Stomach, with Enteroptosis.*^a By H. C. TWEEDY, M.D. Dubl., F.R.C.P.I.; Physician to Madam Steevens' Hospital, Dublin; Examiner in Medicine, Conjoint Board R.C.P.I. & R.C.S.I.

THE case I have the honour of submitting to the Pathological Section is interesting from a twofold aspect. In the first place it is not very frequently that we have an opportunity of making a *post-mortem* examination on a case of dilatation of the stomach so well marked as in the specimen before you, and in the second place it gives me an opportunity of describing another remarkable feature which was present in the same case, viz.—enteroptosis, an anatomico-pathological condition first described by

^a Read before the Pathological Section of the Royal Academy of Medicine, on Friday, Dec. 1, 1893. [For the discussion on this paper, see p. 169.]

Glénard^a in 1885, subsequently discussed in a very exhaustive manner by Ewald,^b of Berlin, Einhorn,^c of New York, and a number of other French and German physicians, but which, as far as I am aware, has not hitherto attracted any notice in this country, though it is of tolerably frequent occurrence, as is evident from the fact that among 1,300 patients with digestive troubles Glénard found 400 with enteroptosis.

CASE.—The patient, P. C., in whom these conditions were observed, was a labouring man from the west of Ireland, thirty-five years of age, of medium height, pale and bloodless aspect, attenuated body and limbs, and who had lived for years on a diet consisting largely of potatoes. He was admitted to Steevens' Hospital on the 23rd of October, 1893, complaining of loss of appetite, vomiting, and gastric pains of long standing. He stated that his stomach had been delicate for many years. He had been in the Royal Irish Constabulary ten years before, but had been discharged in consequence of ill health. He subsequently drank very hard, and had an attack of *delirium tremens*. As his stomach trouble continued steadily increasing, he came up to Dublin, and passed under my care. On admission to hospital he presented the appearance already mentioned, being badly nourished, sallow, the surface of the body and the extremities cold, with a subnormal temperature, and constipated bowels. The abdomen was not distended, but was flaccid and easy to palpate. The abdominal organs were apparently normal, no tumour of any kind could be felt, but the stomach was enormously dilated, extending far below the umbilicus, as was evidenced by a tympanitic note, and by the splashing sound which could be freely elicited all over the umbilical and the upper part of the hypogastric region. The stomach contents, which were examined by means of Einhorn's deglutable bucket, showed an almost complete absence of free hydrochloric acid after a test meal, when treated with Günzburg's solution.

After admission to the hospital he had no vomiting for a week. At the end of that time, however, one morning he was much worse than he had been. He said he knew he had caught cold. From that time on he had vomiting every day, and grew weaker and weaker till the night of the 8th of November, when he was seized with fits, of which he had about six attacks, each lasting for about five minutes. He sank gradually, and died of exhaustion on the 9th of November.

The following day a *post-mortem* examination was held. On opening the abdomen almost the entire superficial space was occupied by stomach,

^a Lyon Médic. Mars, 1885. T. XLVIII., p. 450.

^b Berliner. klin. Woch. 1890. No. 12, &c.

^c Post Graduate. New York. Vol. VIII. No. 2. 1893.

in fact nothing else could be seen at first except a wedge-shaped portion of the left lobe of the liver, which was inserted into a sort of sulcus, which was all that was apparent of the lesser curvature. The greater curvature almost touched the pubes, and covered in both iliac fossæ, and the fundus could be felt as high as the sixth intercostal space on the left side.

On raising the stomach the transverse colon came into view, extending from the hepatic to the splenic flexure in a long curve corresponding roughly to the greater curvature, and about the level of the anterior superior iliac spines. The ascending colon was normal in position and length, as was also the descending colon; but the angles found at the hepatic and splenic flexures—especially the latter—were very acute in consequence of the descent of the transverse colon. This portion of the intestine and the ascending portion were packed with hardened fæces. The liver, both kidneys, and spleen occupied their normal positions, as did also the upper portion of the duodenum. There was scarcely a trace of great omentum, and the transverse colon, as before mentioned, was almost in immediate apposition with the posterior aspect of the stomach. There were no adhesions, or any other signs of inflammation present.

The stomach contained about a quart of liquid, and when after its removal it was filled with water, its capacity was found to be 160 ounces. The pylorus was somewhat thickened, as were also the walls and mucous membrane, except at the fundus, and about the centre of the greater curvature there was a small round cicatrix, about the size of a sixpence, evidently the seat of a former ulcer.

To trace the cause of this great dilatation of the stomach is not a difficult task. First, we have the long and habitual overloading of the stomach. The patient was a poor man. Potatoes had for years formed a staple portion of his diet, and the poor quality of this form of food necessitated taking large amounts of it, thus weighing down the stomach till even the hypertrophied muscles are unequal to the strain of propelling the food into the duodenum. Hence the retention and stagnation of the ingesta, followed by gastric catarrh and subsequent atony and even paresis of the muscular fibres. But there is another—an anatomical—cause; I mean the relation of the pylorus to the duodenum. The first part of the duodenum is two inches in length;^a it is covered by the same two layers of peritoneum which envelop the stomach; it possesses tolerable freedom of motion, and passes backwards and to the right, turning sharply to form the second portion, which runs downwards for about three inches, and is firmly fixed. Any

^a Vide Manual of Fract. Anat. Cunningham. Vol. I., p. 502.

cause, therefore, that would tend to depress the stomach would naturally cause traction on the pylorus, and consequently on the first portion of the duodenum.^a This would necessarily give rise to a stenosis by increasing the sharp bend between the movable first portion and the fixed second portion of the duodenum. This was the more probable as there was little or no constriction of the pylorus, the valve being easily permeable by the tip of the index finger.

But perhaps the most interesting feature of the case was the position of the transverse colon, which represented, though in a somewhat exaggerated degree, the condition described by Glénard under the name of "enteroptosis."

Glénard^b based his observations on the fact that the alimentary canal, from the stomach to the rectum, is suspended by ligamentous attachments at certain points; that at several of these fixed points sharp angles were formed; and that if any of these ligaments became relaxed or gave way it was attended with two results:—1st. A falling (ptosis) of that portion of the alimentary tract; and 2nd. In certain cases—*e.g.*, in the transverse colon—increased traction on the next fixation point, causing obstruction to the passage of ingesta, and even partial stenosis of the intestine itself. He describes different varieties of this affection, according to the situation in which the attachments become relaxed, as "gastroptosis, hepatoptosis, splachnoptosis, nephroptosis," &c.; but it is with enteroptosis alone we have now to deal.

Glénard believes that the condition is most likely to arise in the right portion of the transverse colon; that owing to a relaxation of the colico-hepatic ligament, the ascending and transverse portions run obliquely from below upward across the abdomen to the splenic flexure, where the intestine is held firmly in its place by the phrenico-colic ligament; that the acute angle produced at this point by the falling down of the other end of the transverse colon causes a narrowing of the lumen of the gut and stoppage of its contents. He details several physical signs as diagnostic of this condition, as splashing, pulsation of the abdominal aorta, movable kidney on the right side—all of which may be met with under other conditions; but the physical sign on which he lays most stress is "corde colique transverse," by which he means the

^a Since the above was written, I notice that attention has been drawn to an almost identical condition by Sir Wm. H. Broadbent in his lecture published in the "British Medical Journal," December 2nd, 1893.—H. C. T.

^b Loc. cit.

sensation on palpation as of a ribbon-like band, one centimetre in width, which was supposed by Glénard to be the displaced transverse colon lying over the aorta, above the navel. His reason for believing this was that pressure in the right iliac fossa on the ascending colon produced rumbling sounds in the "corde transverse."

Ewald is of opinion that the "corde colique transverse" is in reality the pancreas, and believes that the surest method of diagnosing the condition is to find out the exact position of the stomach. This is done by the ordinary method of inflation or by gastroduaphany as practised by Einhorn, and if the lesser curvature of the stomach be found below the ensiform process, or midway between it and the umbilicus, he concludes that gastropotosis is present, and, this being so, that the diagnosis of general enteroptosis naturally follows.

In speaking of patients suffering from this affection, Glénard alludes to them as nervous dyspeptics, and Ewald classifies the disease among neuroses of the stomach, as the remarkable relaxation of ligaments leading to gastropotosis, splanchnoptosis, &c., would probably most frequently be found in neurotic subjects. But no such cause could be assigned in the present case, in which the condition appeared to be of a purely mechanical origin. In the first place, there was no malposition of the ascending colon, the hepatic flexure was in its normal position, as was also the splenic flexure; but evidently the stomach, as it became more and more dilated, caused strong traction on the freely movable transverse colon; this it could readily do as the omentum was so short. The intestine was thus gradually drawn down and stretched till it was much greater than its normal length, extending, as it did, along the posterior aspect of the stomach, level with, and in the mesian line lower than, the two iliac spines, while the accumulation of fæces further increased the weight of the bowel, and also in a great measure accounted for the constant pain the patient suffered, as there was a continual drag on the phrenico-colic ligament.^a

This case, then, though a true ptosis of the transverse colon, differs from the condition described by Glénard in the following particulars:—

1st. The patient could not be pronounced in any sense a neurotic subject.

2nd. The hepatic flexure of the colon was in its natural position,

^a Vide Paper on "Causation of Left-side Pain." By Dr. Wallace Beatty. Trans. Royal Acad. Med., Ireland. 1883. P. 25.

nor was there relaxation of any of the attachments of the bowel with the exception of the transverse mesocolon.

3rd. In a typical case of Glénard's disease the transverse colon is the first part affected; then follows relaxation of the mesentery, the small intestine descends to the pelvis, the stomach is then drawn down (gastroptosis), and subsequently there may be a falling of all the viscera, constituting what he termed splanchnoptosis.

In the case before us, however, the enteroptosis was distinctly secondary to the dilatation of the stomach, or at least coincident with it.

CHLORALOSE.

IN a communication to the Genoa Academy of Medicine, Signor Maragliano gives his experience with chloralose:—Sleep follows a quarter or half an hour after the administration of the dose, and continues the whole night through, followed by drowsiness next day. The sleep is unbroken and undisturbed by dreams. Patients troubled with a cough found the chloralose rather aggravated the intensity and frequency of the fits during sleep. Sometimes local and general convulsions, lethargy, catalepsy, and somnambulism, have followed on its administration. These observations correspond with the physiological effects noted by the discoverer of chloralose, Heffter, in 1889. Experimenting on frogs, dogs, and rabbits, he found that full doses produced convulsive movements, and finally death by paralysis of the centre of respiration. Throughout, the drug produced no depressing effect on the heart, neither was the blood pressure lessened in the arteries.

THE BINIODIDE OF MERCURY.

MR. A. HANBURY FRERE, M.B., of Leeds, in a letter dated July 28, 1893, addressed to the editor of this Journal, calls attention to the very great value of the biniodide of mercury, as recommended by Dr. Illingworth in his valuable little work.^a In a recent epidemic of whooping-cough those cases in which the biniodide was prescribed did markedly better than the others. In scarlet fever and diphtheria, as also in puerperal fever, the biniodide cannot be surpassed. In the treatment of wounds Mr. Frere never found the biniodide to fail; and his only surprise is that the bichloride should still be used, more especially when it has been pointed out that to prevent mercurial poisoning the iodide of potassium should be taken, thus rendering the metal soluble and not cumulative.

^a "The Abortive Treatment of Specific Febrile Disorders by the Biniodide of Mercury." Published by H. K. Lewis, 136 Tower-street, London, W.C.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Text-book of the Physiological Chemistry of the Animal Body, including an account of the Chemical Changes occurring in Disease.

By ARTHUR GAMGEE, M.D., F.R.S. Vol. II.—The Physiological Chemistry of Digestion. London: Macmillan & Co. 1893. Pp. 528.

IT is nearly fourteen years since the first volume of this important work was published, and during all this time it has remained a standard book of reference for physiological chemists. Although called a first volume it was really an independent work, complete in itself, dealing with the chemistry of the elementary tissues, the blood, lymph, and chyle.

The present volume, which has been so long looked for, is also an independent treatise, dealing completely and exhaustively with the great subject of digestion. There can be no doubt that it is a worthy successor to the earlier volume and that it will prove equally useful and popular among scientific men.

Although there is in many places abundant evidence of the independent investigations of the author, yet the work is mainly a compilation, but a compilation of a very remarkable kind. Any one who has had occasion to work up the literature of any great branch of Physiology knows the enormous labour involved in such an undertaking, owing to the enormous mass of papers and the widely-scattered way in which they are published in journals of all kinds and of all nations. In the present volume will be found probably the most full, exact, and complete *résumé* of the literature of the Physiology of Digestion that has ever been attempted. We know of no work in which the views of the different authors quoted are so fully given, and where every statement is accompanied by a reference to the source from which it is derived. The value of such a work can scarcely be over-estimated, and the labour which it will save to future workers will ensure the author much gratitude.

After a few introductory observations on enzymes and their mode of action, the subject of saliva is considered. A sufficiently full account of the structure and nervous supply of the salivary glands is given, and the changes observed in the cells during the process of secretion are touched on. The existence of a mucigen or precursor of mucin, which has been assumed from differences in logwood staining, is considered on the authority of Langley as very doubtful. We are surprised to find no notice of the zymogen of ptyalin, which seems to be proved by the observations of Goldschmidt, who found that saliva collected from the parotid duct of the horse aseptically and without coming in contact with the air possessed no diastatic power, but gained this in the mouth during the act of chewing or when it lay for a short time exposed to the air.

A very full and clear account is given of the changes produced in starch by the action of saliva, and of the changes undergone by the saliva in disease.

In the next chapter, on gastric digestion, a most interesting and readable historical sketch is given, showing the gradual development of our knowledge of this process.

The methods of obtaining gastric juice, the phenomena attending its secretion, the influence on it of the nervous system, and its physical and chemical characters are all dealt with. Its important constituents—pepsin and acid—are then considered more fully. The author proposes a modification of Maly's well-known hypothesis to explain the formation of an acid secretion from the alkaline blood. He removes the seat of formation of hydrochloric acid from the blood generally to the gastric glands, and while adopting Maly's conception as to how physical and chemical processes may lead to the formation of the acid of the gastric juice, he subordinates them to the activity of the glandular epithelium, which must first bring together the bodies which have to react one upon the other.

In this chapter the section on the action of the gastric juice on proteids is most remarkable. The subject of the changes which proteids undergo on their way to peptones is one of the most difficult and chaotic in physiology. Here we find the processes clearly and intelligibly described, and at least a comparative order introduced. This part is supplemented by sections in the Appendix giving the more recent researches of Neumeister and of Kühne, who states that he has at last succeeded, but by a most

laborious method, in getting peptone absolutely free from all mixture with albumose. The rennet ferment is fully treated of, and important sections will be found on the changes in the gastric juice in disease, and on the methods to be employed in the examination of the gastric contents for clinical purposes.

In the chapter on the pancreas the structure and the nervous and vascular supply of the organ are first described; then the methods of establishing a fistula, the general characters of the secretion, and the changes in the cells accompanying the activity of the gland are detailed. An account of the general physical and chemical characters of the secretion follows, and then the different ferments are considered *seriatim*.

Professor Gamgee differs from those who deny the existence of a fat splitting enzyme, and who attribute the decomposition of neutral fats to an organised or bacterial ferment. He does so on the following grounds:—

“First—Perfectly clear glycerine extracts of pancreas may be obtained which possess the fat-decomposing powers. Secondly and thirdly—The action is one which is, as Bernard showed, almost instantaneous, and in this respect resembles actions exerted by other unformed ferments, and is unlike those which are dependent upon organised forms. It takes place, moreover, in the presence of such bodies as thymol, which effectually prevent the action of the organised ferments.”

Here, as in the case of the stomach, an admirable account is given of the products of pancreatic digestion of proteids—the antipeptones or tryptones and the products other than albumose and peptone. Among these are the long-known leucin, tyrosin, aspartic and glutamic acids, and the chromogen or tryptophane, but there have recently been discovered certain basic substances—namely, lysin and lysatin or lysatinin, the latter having the same empirical formulæ as creatin and creatinin, and like them capable of yielding urea by their decomposition. It is, therefore, probable that some of the urea may be derived from decomposition of lysatinin, but calculation shows that only one-ninth of the entire quantity of urea formed can have this origin.

Naturally, the bile comes in for a very extended notice. The methods of obtaining bile, the different kinds of biliary fistula, the secretion of bile and the circumstances which influence it, are all fully described. The so-called amphibolic fistula of Schiff is specially commended. Here a fistula is made into the gall-bladder, but the common bile duct is not occluded, so that at will the bile

can be made to flow externally or into the intestine. This is a matter of importance, since the researches of Wertheimer have proved beyond question that bile is absorbed from the intestine and secreted over again, thus establishing the truth of what has been called the circulation of bile.

The general characters of the bile are then given, and this is followed by a description of each of its constituents.

The author believes that urobilin is identical with Maly's hydrobilirubin, thus differing from MacMunn. He rightly warns against the danger of drawing far-reaching conclusions as to the existence, origin, identity, and relations of complex organic bodies merely from a study of the absorption spectra, or rather of the absorption bands, of organic fluids or extracts, and of the changes which they exhibit under the influence of certain reagents.

He has also made the important and interesting observation that the cholehæmatin, which occurs in the bile of sheep and oxen and gives a four-banded spectrum, does not exist in the bile at the moment of death, but rapidly forms when the bile is exposed to the air, independently, however, of all putrefaction.

The so-called mucus of the bile, which is now known not to be mucus but a nucleo-albumin, has a section to itself.

A very full discussion of all the questions connected with the uses of the bile, and in how far it is to be considered an excretion and how far a digestive secretion, is given in this chapter.

In the following chapter the subject of jaundice is dealt with. The existence of a hæmatogenous jaundice is, in accordance with all modern views, denied, and it is maintained that all cases of jaundice are due to reabsorption of bile already formed in and by the liver. Notwithstanding all the researches which have been made on the influence exerted by drugs on the secretion of bile, the subject is still very badly understood. The author is of the opinion that a renewed investigation of the subject is desirable, carried out by means of Schiff's amphibolic biliary fistula, by which the disturbing influence of the absence of bile from the intestine might be eliminated from the experiment.

A very interesting chapter on gall-stones, and one on the methods for the analysis of the bile and biliary calculi, bring the consideration of the bile to a close.

In the chapter on intestinal digestion we find, first, an interesting account of the recent investigations on the chemistry of the of the reticular or adenoid tissue of which the mucous membrane

consists. This differs from ordinary connective tissue. It does not yield gelatin on boiling, and is unacted on by trypsin. A substance has been got from it in tolerable purity which is named reticulin by its discoverer, Siegfried. This, while related to the proteids differs from them in many respects; it contained a larger percentage of sulphur, also phosphorus not due to a nuclein residue. "When subjected to prolonged boiling with stannous chloride and hydrochloric acid it yields amido-valerianic acid, sulphuretted hydrogen, ammonia, lysine, and lysatinine, *but neither leucine nor tyrosine.*"

Some valuable practical hints on the best method for the establishment of a Vella's fistula will be found on page 407.

The author has found that pilocarpin does not constantly call out a secretion of succus entericus.

The following summary of the actions of the intestinal secretion is given:—"The intestinal mucous membrane and its secretion have thus been shown to exert no chemical action on the proteid constituents of food, but to play a great part in the digestion of the carbohydrates of the economy, completing, if necessary, the conversion of starch into soluble products, splitting up saccharose and lactose into glucoses, but, above all, converting maltose into grape sugar.

Proper putrefaction does not occur in the small intestine; but under the influence of bacteria, many of which have been isolated and studied, the contents of the bowel undergo a decomposition of a more fundamental character than that brought about by the digestive enzymes. The results of these decompositions are the subject of the tenth chapter, where we find an account of the indol, skatol, aromatic oxy-acids, phenol, and other products of intestinal bacterial action. The conversion of carbohydrates into lactic acid, alcohol, and possibly butyric acid, has been shown by the researches of Macfadyen, Nencki, and Sieber, and to this large development of acid is due the established fact that the contents of the small intestine, except at its very upper part, are acid. From this it follows that the action of the pancreatic secretion, whose ferments are destroyed by acid, must be suspended higher up than was formerly supposed.

The unexpected and remarkable discovery that water is not absorbed from the stomach, which has recently received full confirmation from the experiments of v. Mering, obtains full notice, and is a good example of how well up to date the work is brought.

We are, therefore, the more surprised to find no notice of the experiments of Hermann and his pupils showing the large share taken by the secretion of the intestine in the production of fæces.

The non-occurrence of ptomaines in the intestine under normal circumstances, and even for a day after death, is remarkable, since bacteria are present, which, when removed from the body, are capable of producing ptomaines in culture media. This may be due either to the antiseptic action of the bile or to the oxygen which probably diffuses continually from the blood to the intestinal contents. In some cases, however, ptomaines have been found. Thus, in cystinuria both cadaverin and putrescin have been found, while in cholera these ptomaines, which are innocent, and, in addition, the very poisonous methyl guanidin and other ptomaines which lower the temperature are found. We are convinced that many obscure forms of disease will find their explanation in abnormal bacterial actions which occur in the intestines owing to infection, or to change in the digestive secretions.

The processes in the large intestine and the formation of the fæces conclude the chemistry of digestion. In the chapter treating of this stage of the process we find much of interest concerning the fæces in disease, such as the remarkable difference recently discovered by Blachstein between *Bacillus coli communis* and *Bacillus typhi*. Both decompose sugar with production of lactic acid; but, while *Bacillus coli communis* forms dextrogyrous lactic acid, *Bacillus typhi* forms lævogyrous lactic acid, and, so far as is known, is the only *pathogenic* organism which does so.

In the last chapter is some account of the comparative physiology of digestion, and in an Appendix are given some recent works which appeared during the printing of the book, dealing chiefly with the products of gastric digestion and the methods of analysis applicable to the contents of the stomach.

In conclusion, we have again to express our high estimate of the value of this book. It forms a platform from which future workers can start, as by it they are brought fully up to the level of our knowledge of to-day. The fulness of the references and the vast amount of information given in the text makes it almost unique even among the many excellent works on physiological chemistry which have recently appeared.

The volume is admirably printed, and in every way handsomely brought out. It is illustrated with well-executed wood engravings and two beautiful chromo-lithographic plates of bile spectra. We

find, however, even for a first edition, a very large number of misprints. We hope that the demand for a second edition will soon give the author an opportunity of correcting these.

A Treatise on Hygiene and Public Health. Edited by THOMAS STEVENSON, M.D., F.R.C.P. Lond.; Lecturer on Chemistry and Medical Jurisprudence at Guy's Hospital; Official Analyst to the Home Office; and SHIRLEY F. MURPHY, President of the Incorporated Society of Medical Officers of Health; Medical Officer of Health of the Administrative Council of London. Vol. II. London: J. & A. Churchill. 1893. 8vo. Pp. 847.

IN noticing the first volume of this great work in the number of the *Journal* for November, 1893 (Vol. XCVI., No. 263, Third Series, page 401), we drew attention to the main features of the book. These are reproduced in the second volume, which now lies before us. It contains monographs of the greatest value and of the first importance on several of the vexed questions of the present day, such, for example, as the pathology and ætiology of infectious diseases (Dr. E. Klein), the natural history of infectious diseases (Mr. T. W. Thompson), and the disposal of the dead (Sir T. Spencer Wells, Bart., and Mr. F. W. Lowndes). Nor are the other subjects dealt with in the volume of less interest and value. Dr. John C. McVail writes in detail on smallpox and vaccination, Dr. Arthur Ransome on vital statistics, Dr. Henry E. Armstrong on marine hygiene, Dr. J. Lane Nutter on military hygiene, and Dr. Alfred Ashby on the "Medical Officer of Health."

That trouble and expense have not been spared to make this work worthy of its great theme is evident by the fact that no less than forty-two plates of lithographs and chromo-lithographs by Newman West illustrate Dr. Klein's article on the pathology and ætiology of infectious diseases.

With singular discretion and conspicuous success the editors have left each author to express his views with absolute freedom from editorial restraint, wisely judging that their duty to the medical public was in large measure discharged when they had selected men of reputation and standing as contributors of articles on topics with which their names were already more or less intimately associated and identified.

Nor have the editors attempted to prevent that amount of

repetition which is unavoidable when a number of authors write independently on kindred topics.

The principles which have thus guided the editors in the discharge of their duty have added freshness and novelty to a work which may be taken to represent modern English opinion in relation to Preventive Medicine.

It would not be possible within the limits of a review to do justice to this large volume of more than eight hundred pages. We must, therefore, be content to draw attention to a few salient features in the different monographs which make up the work.

Dr. Klein's definition of bacteria is well worth quoting. "Bacteria," he says, "are microscopic organisms which contain no chlorophyll, which possess an investment of cellulose, and are therefore considered to belong to the vegetable kingdom, which multiply by simple division or fission, and are therefore called by Naegeli, Schizomycetes ($\sigma\chi\acute{\iota}\zeta\omega$, divide, and $\mu\acute{\upsilon}\kappa\eta\varsigma$, fungus). . . . They do not possess, in any conspicuous degree, like vegetable cells, the power of building up complex organic substances from simple inorganic material; but, on the contrary, on the plan of animal cells, they have in an eminent degree the character of destroying or breaking down higher or complex organic molecules into those of simpler combinations." "Bacteria," the author adds, "are single cells of extremely minute size, 0.1 to 1 μ^a or more, consisting of a protoplasmic body—mycoprotein of Nencki, and an investing sheath of cellulose. The protoplasm while active and living is homogeneous, when dead often appears granular; it has great affinity for neutral and basic aniline dyes, and in this respect compares with the substance of nuclei in vegetable and animal cells." (Page 5.)

Chapter II., on the conditions and mode of multiplication of bacteria, reads in places like a fairy tale. For example, an experiment was made of injecting 20,000 bacilli of fowl-cholera into a rabbit. The animal died in about twenty hours, when it was estimated that its blood contained some 1,200,000,000 of the specific microbes of the disease. This would mean that each one of the 20,000 bacilli injected had given origin to a host of 60,000 bacilli in twenty hours.

According to modern research, bacteria may be grouped into (1) obligatory anaërobic, or such species as do not grow except when free access of oxygen (air) is excluded; (2) facultative

^a 1 μ = one micromillimetre = one twenty-five thousandth of an inch.

anaërobic, or such as can grow in absence of free air, though they grow better if air be present; (3) facultative aërobic, or those which grow better without free air, though they grow also, but not so well, when free air is admitted—*i.e.*, on the surface of the nutritive medium; and (4) obligatory aërobic, or such as do not thrive and multiply without copious supply of air. It was, of course, Pasteur who first showed that a radical difference existed between the various bacterial species in their requirement of free access of air during their growth and multiplication. He distinguished those which can grow without free access of air as anaërobic, the others as aërobic.

Dr. Klein points out that one of the most important and interesting phenomena in the life-history of bacteria is the power of some species to form *permanent seeds or spores*, by which the species can preserve itself and withstand a variety of adverse circumstances, for example, the presence of different noxious chemicals, cold, heat, drying, &c. For this reason, the question of the formation of spores plays a most prominent rôle as regards infectious diseases. The author cites some very striking illustrations of this fact. Thus, the deadly *Bacillus anthracis* does not form spores when kept away from the air—*i.e.*, from a supply of oxygen. If, then, the body of an animal dead of malignant anthrax is left unopened and so buried, no harm follows, because the specific bacilli gradually degenerate and disappear, being suppressed by putrefactive organisms. But let the blood, or the nasal or other discharge, from such an animal be exposed to the air for a sufficient time, the bacilli will form spores, and then neither putrefaction, nor drying, nor chemical agencies such as acids and alkalies, will affect the power of these spores to germinate again into bacilli and to produce virulent anthrax should they find access to a suitable animal body. If the infected blood and discharges of an animal dying or dead of malignant anthrax finds access to the surface of the soil, the bacilli multiply and form spores. It is these spores which, after the lapse of months or even years, are picked up by animals grazing in the infected field. The same thing occurs in woolsorters' and hidesorters' disease, which is virulent anthrax in the human beings engaged in the sorting of wool or the handling of hides derived from animals—sheep, goats, and cattle respectively—which had succumbed to fatal anthrax. In these cases it is always spores of the *Bacillus anthracis* which are the cause of infection of the human beings who handle the hides.

It is believed that no micrococcus, or non-spore-forming bacillus, can withstand exposure to a temperature of 70° to 75° C. (158° to 167° F.) even for a few minutes, whereas not a few species of bacilli exist whose spores can successfully resist an exposure to 100° C. (212° F.) for two, three, or even five minutes. The spores of *B. subtilis* and *B. anthracis* readily withstand an exposure to 95° C. (203° F.) for nearly an hour.

A temperature of at least 16° C. (60·8° F.) is required for the formation of spores, which takes place as endo-spores. Spores while fresh have a conspicuously sharp and dark outline, their general aspect is glistening, and it is supposed by Cohn that they are possessed of a double envelope, an inner one of a fatty and an outer one of a gelatinous nature: it is particularly the former which provides the spores with their great resistance to drying and to heat. Spores when placed under suitable conditions of warmth, soil, moisture, and air-supply germinate again into bacilli, the first indication that they are about to germinate being that their outline becomes less sharp at one point. This is generally at one of the poles, or at the long side of the spore. The time required for the germination of a bacillus from a spore varies with the different species. Koch observed the process in *B. anthracis* to be completed within an hour. Klein himself witnessed the complete formation of a bacillus from a spore of *B. filamentosus* in broth, in the "suspended drop," at 37° C. (98·6° F.), to be certainly less than an hour.

The chapters (III. and IV.) on the morphology and biology of bacteria are full of interest. They are followed by an account of phagocytosis and immunity, but Dr. Klein is no blind follower of Metschnikoff and his school. He inclines rather towards the views of Buchner, who has given good reasons for regarding the germicidal substances as belonging to the albuminous bodies of the blood and plasma, so that he has called them "alexins" (Gk., ἀλέξειν, *to protect*). The author has "arrived at the conclusion, which seems on the whole the most feasible one, that the principal and essential agent in preventing the growth and multiplication of particular specific microbes within the insusceptible animal is the inimical action of the lymph and blood plasma, the alexines; this action may or may not produce phagocytosis. In the former case the phagocytosis may help to remove the weakened or dead bacteria, but this is not an essential or necessary factor in the process of the weakening and destruction of the microbes. Where the blood

or the tissue juices do not possess this power, the animal is susceptible." (Page 55.)

The foregoing facts are brought out in Section A. of Dr. Klein's monograph. Section B., which occupies about 160 pages of the volume, is devoted to a description of the different specific or pathogenic bacteria. This part of the work is uncommonly well done. Many interesting questions are discussed, and, on the whole, a satisfactory account is given of the various diseases and their bacteriological relations. Contrary to the opinion held by E. Fränkel (*Centralblatt für Bacteriologie und Parasiten*, VI., p. 691), Klein maintains, with Fehleisen, the separate identity of the microbe of erysipelas. No doubt, the morphological characters of the *Streptococcus pyogenes* and the *Streptococcus erysipelatos* are closely akin, but Klein points out that no clinical observer will admit that erysipelas is an ordinary phlegmon, while the assumption that the *Streptococcus pyogenes* of simple phlegmon may increase in virulence, and so cause erysipelas by becoming the streptococcus of this disease, and that, on the other hand, this streptococcus by attenuation may cease to cause erysipelas and produce only simple phlegmon, "is based on very insufficient evidence."

Chapter XVI., on epidemic pneumonia and influenza, opens with a sentence which does scant justice to English clinical observers. Dr. Klein says:—"By the researches of Leyden and others it has been shown that the disease known as lobar or croupous or fibrinous pneumonia belongs to the group of infectious diseases." The bacteriology of influenza, up to the present, is little more than a negative quantity, notwithstanding Pfeiffer's and Kitisato's discovery of the "constant presence" in the bronchial sputum and in the pulmonary exudation in all cases of influenza, mild or severe, of minute bacilli, showing when stained a characteristic bipolar granule with intermediate clear part, which causes them to resemble diplococci.

We cannot speak in too high terms of praise of the splendid series of forty-two plates which illustrate Dr. Klein's monograph. They are a costly, but an invaluable, addition to his work. The interest of the series probably culminates in the last—the forty-second—plate, which is copied from Golgi's "*Studien über Malaria*," which appeared in the fourth volume of the *Fortschritte der Medicin*. Thirty of the thirty-eight drawings included in this plate show the behaviour of the *Plasmodium malariae* inside a red blood disc, its growth at the expense of the substance of the disc,

the formation and gradual shifting in position of pigment granules derived from the hæmoglobin, and the various progressive stages in the process of cleavage undergone by the plasmodium to its completion and the final isolation of the spores.

The second monograph in this volume is by Mr. T. W. Thompson on the "Natural History of Infectious Diseases." We are sorry to find that he is not sound on the doctrine of the separate entity of Rôtheln. He admits, indeed, that "the consensus of modern authorities as to the existence of a malady of the above sort seems to be too strong to allow of serious doubt upon the point; but," he adds, "to the independent mind a perusal of the literature of the subject may perhaps justify suspicion that the attitude adopted by some authorities upon this matter is somewhat too exclusive and absolute." He afterwards goes so far as to say that "neither would there seem any inherent impossibility in the notion of some of such disease varieties, including rôtheln, being of a hybrid character, as has frequently been suggested." "It might be suggested as a criticism upon the hybrid theory that in bacteria sexual processes are absent. This, however, can by no means be safely affirmed." (Page 265.)

Now, the answer to such speculative statements is to be sought for, and will be found in, close, painstaking, and extended clinical observation of the three diseases—measles, scarlatina, and rôtheln. The confusion which has arisen has resulted from superficial, careless, and limited observation. A measly rash is detected—the disease is measles; a scarlet rash, unaccompanied by any of the classical epiphenoma of scarlatina, appears—the disease is scarlet fever. In reality, in each case it is rôtheln, and nothing else.

The opening sentence of Mr. Thompson's account of typhus fever is not felicitously expressed. He says (p. 274):—"Typhus has only in our own day been clearly differentiated from other fevers, notably enteric and relapsing fevers, with which it had been previously confused." The reverse is more strictly true—enteric fever and relapsing fever were mistaken for typhus, not typhus for them.

The description of typhus, like that of the other infectious diseases, is illustrated by a curve copied from Dr. Alexander Buchan's and Sir Arthur Mitchell's well-known paper on "The Influence of Weather on Mortality," which was published in the *Journal of the Scottish Meteorological Society*, July, 1874, and July, 1875. This curve is based on the deaths from typhus, for

all ages and both sexes, which were registered in London in the years 1869-1874. A marked rise in the curve towards the close of September and early in October can hardly be due to any other cause than a confusion between enteric fever and typhus. The true typhus curve does not show an upward tendency until the end of December—three months later in the year.

Mr. Thompson's accounts of diphtheria, epidemic cerebro-spinal fever, enteric fever, and cholera are all good and full. At the end of his description of enteric fever, however, he inclines to the heterodox view that this disease may arise spontaneously. If so, why should he not at once admit the *de novo* origin of cholera and any other specific disease?

The third monograph in this volume is on "Smallpox and Vaccination" by Dr. John C. M'Vail, F.R.S.E., Medical Officer of Health of the Counties of Stirling and Dumbarton. It forms an excellent summary of the subject from a Public Health point of view, and the historical portion is replete with learning and shows deep research. As was natural, the epidemic of smallpox at Sheffield in 1887-88 affords much material for discussion. A diagram is reproduced from Dr. Barry's able report on that now historic outbreak on page 449, which shows in a very striking way the proportion of cases of smallpox of different types which occurred in persons of the "vaccinated" and "unvaccinated" classes respectively at all and certain specified ages in the Borough Hospital, Winter-street, Sheffield, and at the Sheffield Union Workhouse Hospitals. The evidence thus graphically brought forward is conclusive, but the appearance of the diagram is unfortunately marred by clumsy workmanship. Writing in Dublin, we cannot but regret the omission of any reference by Dr. M'Vail to the very important statistics relative to smallpox and vaccination drawn up after the epidemics of 1871 and 1878 by Dr. T. W. Grimshaw, now Registrar-General for Ireland, and embodied by him in his Medical Reports to the Managing Committee of Cork-street Fever Hospital, Dublin. More startling testimony against the anti-vaccination fanaticism of a small portion of the community could not be adduced than that which the experience of the two fearful epidemics of recent times in Dublin bears in silent eloquence.

In the history of protection by vaccination given by Dr. M'Vail, Benjamin Jesty, the Gloucestershire farmer, occupies no niche in the temple of fame. According to our author, somewhere about

the year 1768, a young woman called for advice at the surgery of a country doctor in a Gloucestershire village. Referring in the course of conversation to smallpox, she remarked, "I cannot take that disease, for I have had cowpox." The remark was heard by the doctor's apprentice, Edward Jenner, and sank deep into his mind. It was not, however, until 1798 that the results of the experiments suggested by this incident were published in "An Inquiry into the Cause and Effect of the Variolæ Vaccinæ."

Commenting on the alleged risks of vaccination, Dr. M'Vail puts the case well when he says (page 457), "in an ocean of error there may be a droplet of truth." He, of course, admits the occasional, nay the very exceptional, occurrence of vaccinal syphilis and of vaccinal erysipelas. As to the conveyance of leprosy by the operation, the evidence is all but universally negative.

In conclusion, we repeat that Dr. M'Vail has written a first-rate article on a highly important and practical subject. The same remark applies to the remaining communications in this second volume of a great work. Within the narrow compass of 42 pages Dr. Arthur Ransome has managed to condense an immense amount of information on the difficult topic of Vital Statistics, which—as he well observes—"are the foundation of sanitary effort, and the basis of the work of medical officers of health." The headings in this article are—(1) the Census, (2) statistics of mortality and reproduction, (3) statistics of sickness, (4) statistics of measurements, (5) graphic representations of statistics, (6) sources of fallacy in them, (7) methods of using them, (8) practical applications of vital statistics by medical officers of health.

Dr. Henry E. Armstrong and Dr. J. Lane Notter seem to have devoted themselves with great success to the subjects of marine hygiene and military hygiene respectively. The former article ends with a full bibliography of the subject; in the latter Dr. Notter deals with the difficult topic of venereal disease and the repeal of the Contagious Diseases Acts with conspicuous good taste. Incidentally, he expresses the opinion that since the passing of the Compulsory Education Act the moral tone of the population at large has improved, so causing a diminished prevalence of venereal disease, in the benefit accruing from which the army has shared. At the same time, we are thoroughly in accord with him when he says (page 669)—"We are justified in believing that this diminution in venereal disease would have been greater had the

Acts remained in force and their sphere of usefulness been more widely extended."

The article on "Disposal of the Dead" is the joint work of Sir T. Spencer Wells, Bart., and Mr. F. W. Lowndes, Surgeon to the Liverpool Police. It is an able contribution to the subject, and includes a historical account of the different modes adopted by man for disposing of his dead from the earliest to the most modern times. The keynote to the views put forward is struck in this sturdy and uncompromising passage (page 674):—"Man himself, in his omnivorous supremacy, is no exception to the general rule. In his material aspect he does as the rest of creation does. He lives to eat and destroy, as much as he eats to live. In life he is tenant at will of a variable proportion of organisable matter; in death he ought to render it back into the common stock for the use of others, without in any way barring the succession. If he interfere artificially with the natural course of events among the elements of his mortal covering, either retarding development or impeding dispersion, it is an act of vicious perversity. It is his privilege, if he choose to use it, to improve the one and to accelerate the other. We shall see how he falls short of this. Civilised he is synthetically but a bungler; analytically, his interference has been almost criminal."

Needless to say that cremation is *the* mode of disposing of the dead which the authors advocate. They point out that the revival of the practice in England and its spread upon the Continent and in America constitute a purely scientific movement. The opening of a crematorium at Manchester, the erection of a columbarium in Kensal Green Cemetery, and other circumstances, justify the conclusion that old prejudices are dying out, that the sanitary benefits of cremation are becoming appreciated, and that a rapid extension of the practice may in coming years fairly be expected. "That such may be the case is most earnestly to be desired in the interests of morals, health, and economy; and it is not unreasonable to anticipate that Government may recognise and regulate cremation, as well as enforce the rule of single-grave burial upon those who still prefer burial in the earth."

A description follows of the arrangements for cremation at Woking, and of the present standing of cremation abroad.

We may mention that this article is divided into two parts, and that there is internal evidence to prove that Sir Spencer Wells is chiefly responsible for the first part, Mr. Lowndes for the second.

“The Medical Officer of Health” is the title of the closing monograph in the present volume. It has been written by Mr. Alfred Ashby, M.B., F.R.C.S., Medical Officer of Health of Reading, and is a careful and painstaking piece of work. At the outset Mr. Ashby shows that he is master of his subject, for he says that in discussing the duties of and matters relating to medical officers of health it is necessary, in respect of some, to distinguish them in accordance with the several parts of the United Kingdom, whilst others are common to medical officers of health in all parts of it. Towards the close of the article the arrangements peculiar to Scotland and Ireland are given, so that all necessary information is forthcoming for each division of the kingdom.

In concluding this notice, we have again to congratulate the editors on the way in which they have discharged their functions. With singular tact and skill, and in a spirit of self-effacement as grateful as it is rare, they have brought out a second instalment of a great work—a literary masterpiece which adequately represents British Hygiene as it stands in the closing decade of the nineteenth century.

Diseases and Injuries of the Teeth, including Pathology and Treatment. A Manual of Practical Dentistry for Students and Practitioners. By MORTON SMALE, M.R.C.S., L.S.A., L.D.S.; Dental Surgeon to St. Mary's Hospital; Dean of the School, Dental Hospital of London; Member of Board of Examiners in Dental Surgery, Royal College of Surgeons, England; and J. F. COLYER, L.R.C.P., M.R.C.S., L.D.S.; Assistant Dental Surgeon to Charing Cross Hospital, and to the Dental Hospital of London.

THE authors of this book have rendered an important service to dental literature in having compressed such a mass of matter within its covers. The general scheme of the book shows from what a practical standpoint they have viewed the subject, tabulating the different forms of affections of the teeth, and their several modes of treatment. Many most valuable hints are here and there to be found, such as those with regard to the treatment of deciduous teeth, the treatment of irregular ones, and the recent methods of treatment of the dental pulp. They evidently know the value of illustrations in such a practical treatise as this of

which the book is so full, especially those in abnormalities of the teeth and their mechanical treatment, giving the student several new ideas as to how similar cases can be carried out.

Besides the copious chapters on tooth-extraction and tooth-filling, the authors have taken great pains over the pathology of the several dental tissues. In fact there is hardly a subject on surgical dentistry they have not touched on. Indeed, the experienced practitioner will find many useful hints, and the work leaves little to comment upon, and nothing to criticise.

Essentials of Minor Surgery, Bandaging and Venereal Diseases, arranged in the form of Questions and Answers. By EDWARD MARTIN, A.M., M.D. Second Edition, revised and enlarged, with 78 illustrations. Philadelphia: W. B. Saunders. 1893.

IN this well-printed and copiously-illustrated booklet of 166 pages a vast deal of information is placed before the student in simple question-and-answer form, and in the very clear, and sometimes slightly racy, style which characterises so much of the scientific literature of our American cousins. Bandages, knots, sutures, antiseptics, anæsthetics, counter-irritants, cupping, leeching, transfusion, hypodermic medication, fracture-dressings, luxation, gonorrhœa, syphilis, and some smaller subjects, are included in this surgical catechism. The illustrations are extremely clear; the greater proportion are given in the section on Bandages, which, with their help, is made extremely instructive indeed. The *Answers* to the various questions in this section are necessarily short, and, accordingly, the mode of application of some of those bandages of which the descriptions are not accompanied by woodcut figures cannot well be understood. The account of the "four-tailed bandage," on page 49, is one of the poorest.

The author deals more fully with the symptoms and treatment of gonorrhœa and syphilis. Some of the information is rather naïvely expressed. For instance, on page 130, under the heading of the question—"What is the Treatment for Acute Anterior Urethritis?" we are told that, "Prolonged and repeated coitus has a marked influence in encouraging the entrance of the gonococcus into the urethra." The inference is obvious: "Hence, a brief contact is desirable from a prophylactic standpoint." A great deal of information is given on the subjects of the complica-

tions of syphilis, on chancroid and chancre, and on the various lesions which occur in the several stages of syphilitic disease.

On the whole, we cordially recommend this little volume to the student for simple clearness of language, wide range of information, valuable practical hints in diagnosis, and a very considerable accumulation of prescriptive remedies, of the use of mechanical appliances, and of manual dexterity.

Heath's Practical Anatomy: A Manual of Dissections. Eighth edition. Edited by WILLIAM ANDERSON, F.R.C.S.; Surgeon and Lecturer on Anatomy at St. Thomas's Hospital; Professor of Anatomy at the Royal Academy of Arts; Examiner in Anatomy for the Royal Colleges of Physicians and Surgeons. With 329 engravings on wood. London: J. & A. Churchill. 1893.

WE are glad to welcome a new edition of our old friend, "Heath." He was our own dissecting-room guide and faithful counsellor in the days of our professional innocence, and the deserved popularity which the name has attained is the best testimony to the fact that the guidance has been found reliable by many thousands of medical students as well as ourselves. The present issue is thoroughly "up to date." We thought on taking up the volume that there was no increase in matter, but found on examination that 150 pages of additional text have been prepared, while the former bulk has been pretty accurately preserved by the deserved omission of the somewhat ornamental, but not very useful, plates of arteries which had been prefixed to each of the last three editions. Some text illustrations have also been evicted, chiefly those of the histological type, which are of slight use in a dissector's manual; but their place is more than well supplied by the introduction of nearly a hundred new woodcuts, "some original, and some borrowed from other works." which are much more appropriately located.

Mr. Anderson shows in his Preface to this edition that the work "has been subjected to an extensive revision in order to bring it to a level with current teaching and the present requirements of the Examination Boards." In keeping such a standard before him he has but done his duty to the sadly overtaken medical student of the period, and we can well congratulate him on the result to which he has attained. Nothing of importance has been omitted. "The more recent progress in topographical anatomy"

has necessitated important additions in this department, and we have been greatly pleased with the selective concentration of material, clearness of textual description, and judicious employment of illustration, which are displayed in the whole of the new matter. Very special attention has been given to the topography of the abdomen, and we cannot give too high praise to the editor's treatment of this part of his subject. The section on "Cranio-cerebral Topography" is also one to which the critic will naturally turn when endeavouring to form an opinion of the value of the pretensions to scientific reliability claimed for a text-book like the present. This section is judiciously short, and, like all other parts of the text of the volume before us, is written in a style of crystalline clearness. The editor in mapping out the situation of the surgically important regions of the brain has preferred, very naturally, the rules laid down by Messrs. Anderson and Makins. They are as reliable as any of the other numerous methods which have been suggested.

In the case of a volume so well known to the medical-student public as Heath's *Anatomy*, it would be really idle to go into critical details in a notice like the present. It will, we trust, satisfy our readers to know that, for portability of size, readability of type, clearness of thought and diction, judicious concentration of matter, reliability of description and profuse and well-chosen illustration, we know of no manual equal, or even qualified to form a good second, to our old friend, "Heath."

The Hygienic Prevention of Consumption. By J. EDWARD SQUIRE, M.D., London; D.P.H. Camb.; Physician to the North London Hospital for Consumption and Diseases of the Chest. London: C. Griffin & Co. 1893. Pp. 194.

THIS work is divided into three sections—I. The nature of consumption, the bacillus of tubercle, the symptoms of consumption, the modes in which the disease is communicated to healthy individuals, the meaning and varieties of predisposition, and the frequency with which consumption follows certain diseases, and occurs among these engaged in certain occupations. Part II. treats of the prevention of the disease, school life, profession, clothing, diet, and exercise; also of the measures to be taken to prevent the disease spreading in a family in which one member is already the subject of the disease. Part III. treats of the curability

of consumption, and of the climatic treatment of it. This section ends with another account of the symptoms of the disease.

No more important subject could be chosen whereon to write; it is in our opinion a very great pity that Dr. Squire has not written more briefly, and in a more attractive style. It is really to the general public, and not to the medical profession that a work on the prevention of consumption should be addressed, and we fear that the work before us will be found too long, too diffuse, and too heavy to be very widely read. Even from a medical point of view it is badly arranged, and suffers from frequent repetitions—thus, the symptoms of the disease are described at the beginning and again at the end of the book; the necessity of destroying sputum, and not depositing it in handkerchiefs is repeatedly alluded to.

The style is too technical and too full of matters of purely medical interest to make it agreeable to the ordinary lay reader, while it does not contain anything which an ordinarily educated physician might not be reasonably expected to know.

We wish that the information contained in this work was spread widely through the nation; we wish that, in the care of infants and of adults, in the choice of houses and of schools, in the regulation of clothing and of exercise, the British public would pay more heed to what Dr. Squire writes; but we fear they will not be attracted to this work.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army—Authors and Subjects. Vol. XIV.—Sutures—Universally. Washington: Government Printing Office. 1893. Quarto. Pp. 1016.

THIS great work is drawing to a close. The present volume carries us to the word "Universally," and therefore within measurable distance of the end of the alphabet. The present volume includes 10,124 author-titles, representing 6,426 volumes and 8,850 pamphlets. It also includes 9,867 subject-titles of separate books and pamphlets, and 38,461 titles of articles in periodicals.

The Index-Catalogue, as far as published up to the present, contains 157,453 author-titles, representing 77,494 volumes and 135,656 pamphlets. It also includes 151,649 subject-titles of separate books and pamphlets, and 462,165 subject-titles of journal articles.

To Dr. John S. Billings, Surgeon, U.S. Army, the medical literary world is again indebted for an instalment of the most comprehensive Index-Catalogue in existence. We wish him continued health for the completion of the gigantic task set before him.

Transactions of the Pathological Society of London. Volume the Forty-fourth. London: Smith, Elder & Co. 1893. Pp. 242.

THE annual volumes of the Transactions of the Pathological Society are chiefly valuable as being a storehouse, whence future generations of medical men may acquire illustrative cases, bearing upon rare and important pathological conditions. They also indicate what subjects have, during the past year, most vividly exercised the minds of pathologists. When we examine Volume XLIV., with a view to gain information on this point, we are led to the conclusion that the most interesting subject of the year has been the question of the relation of animal parasites to cancers—its longest, most elaborate, and best illustrated papers are on this subject. Dr. Jackson Clark contributes a "Critical Survey of recent Work bearing on the Pathology of Cancer and Sarcoma" from the parasitic point of view. It is chiefly remarkable for the number of the writers from whom he quotes; from the completeness of its bibliography it will prove of much value to the investigator of this subject. Dr. Armand Ruffer and Dr. R. Boyce contribute each an important paper, illustrated, the one with coloured drawings, the other with photographic reproductions, but each with equal beauty, in which the former maintains the parasitic nature of certain structures, while the latter adheres to the theory of endogenous cell formation. Dr. Hebb also communicates a beautifully-illustrated paper on "Cancer-bodies" in a case of diffuse subperitoneal fibrosis. In this case the character of the tissues in which these "cancer-bodies" were found, was inflammatory, and could not histologically be called carcinomatous.

There are three interesting papers on that rare affection, "Subperitoneal Fat Necrosis." Dr. Rolleston in his paper suggests that the change may be trophic in nature, and due to disturbances of the abdominal sympathetic, which is shown clinically by symptoms like those of intestinal obstruction and collapse; and that in this way fat necrosis is secondary to pancreatic lesions.

There are many other excellent papers in this volume, and this year's "Transactions" is quite up to the high standard of its predecessors.

We are glad to see from the Annual Report that the Society is in a most flourishing state.

Diseases of the Skin: An Outline of the Principles and Practice of Dermatology. By MALCOLM MORRIS, Surgeon to the Skin Department of St. Mary's Hospital, London; Corresponding Member of the K. K. Gesellschaft der Aerzte in Wien, of the Wiener dermatologische Gesellschaft, and of the Société Française de Dermatologie. With 8 chromo-lithographs and 17 woodcuts. London: Cassell & Company, Limited. 1894.

THIS excellent text-book of 556 pages is one of the most valuable of the recent additions to Cassell & Co.'s series of "Manuals for Students of Medicine." It is the handiwork of an acknowledged master of the subject with which he has undertaken to deal. We congratulate him most warmly on the result of his efforts, and feel sure that it will add to the lustre of his already cosmopolitan reputation. As the preface tells us, "The work is essentially clinical and practical in its scope, and for more extended details of morbid anatomy the reader is referred to larger treatises on the skin. . . ."

The text is arranged in twenty-three chapters, and is followed by an excellent Index, which occupies ten pages. The contained information is conveyed throughout in language of clear, unpretending simplicity. The author everywhere speaks with the easy diction, and the unassuming confidence in his own convictions, which form the unmistakable characteristics of a teacher who knows his subject, both theoretically and practically. There is no more use of abstrusely technical phraseology than is absolutely necessary for a fair concentration of language; and the aggravating "dead dogmatism, which oppresses or raises opposition" is conspicuously absent—a specially meritorious feature in a work by the hand of a specialist whose personal experience would give him a fair claim to the employment of some clinical egotism.

The first chapter gives a short introductory account of the pathology—including, of course, the bacteriology—of the skin. The second is concerned with "Classification" of cutaneous

diseases. The author mentions the classifications adopted by Plenck, Willan, and Bateman; then passes over as "absurd" the one adopted by Joseph Frank, to come to that of Erasmus Wilson; and he ends with Hebra's. We feel some mental refreshment on finding that, "In the present work no formal scheme of classification is propounded, but the attempt is made to group the diseases described in accordance with the tendency of modern pathological research—that is to say, etiologically." This, we venture to think, is a praiseworthy attempt to break off the hampering fetters which so often bind the thoughts and expressions of medical writers to the hoary traditions of the professional "fathers." "The lines followed are mainly those traced out by Unna, in his arrangement of subjects in the *Monatshefte für praktische Dermatologie*." As the author very truly observes, "The progress of medical science lies almost entirely in the discovery of causes. As this becomes known, fresh groups of diseases will naturally be formed." Accordingly, the cutaneous lesions which owe their origin to disorder of the nervous system are made to form one class; those dependent on irritation—external or internal—a second; those caused by medicinal substances, a third; parasitic diseases, a fourth; inoculable (constitutionally or locally), a fifth; while those whose ætiology is acknowledged to be obscure or unknown are left unclassified. We consider this arrangement to be by far the most scientific in theory, and the most practical in leading up to the all-important consideration of treatment.

The body of the work is characterised by the same soundly practical views which characterise the opening chapters. The volume is thoroughly "up to date," and we have noticed no serious omissions. The enormous number of headings which require discussion in the course of a small volume, necessarily limits the space to be given to the consideration of each; but even in those cases where the notice is shortest, the author's judicious selection of the most important salient points to which attention should be directed, and his concentrated clearness of diction, have enabled him to lay before the student the best landmarks to be referred to in diagnosis and treatment.

In the space of a short review like the present it is, we think, undesirable to attempt to select for special criticism any of the vast number of topics which are treated in a comprehensive textbook of cutaneous diseases. We will merely conclude by saying emphatically, that we think the manual before us fully equal in

reliability, and far superior in convenience of portability and reference, to any treatise that we know of already existing in the English, or, indeed, in any other language.

Myxædema, and the Effects of Climate on the Disease. By A. MARIUS WILSON, M.D., B.S. Durham. London: The Scientific Press, Limited. 1894. Pp. 36.

THE author believes that the accounts of this disease in the dictionaries of medicine and in the ordinary text-books are somewhat antiquated, and that the accounts of cases in the journals are necessarily fragmentary. He, therefore, has written an account of it very similar to what we are already accustomed in the "antiquated" text-books, with this addition, that in discussing the pathology of the disease he ascribes it to an atrophy of the thyroid gland, the result of which is that an insufficient quantity of thyroid secretion is taken up by the blood in its passage through the thyroid blood-vessels. Till we read this work we thought that in health the thyroid secretion was largely taken up by the lymphatics, and through them conveyed to the blood. The author, however, never mentions lymphatic vessels at all. There is a very brief and incomplete account of the treatment by the administration of sheep's thyroids internally.

The author thinks that this book will be of use to a certain class of men whose exact chronological position we confess we cannot understand. He hopes it will be of service to those who had left their *Alma Mater* in the "pre-Myxædematous revival era." We have studied this phrase with anxious care; it seems to us to refer to some who were born under a less-favouring star than was Dr. A. Marius Wilson; and we have concluded that in the kindness of his heart he has not wished openly to refer to these unhappy individuals, but has chosen to hide their identity under this cabalistic, ungrammatical conundrum.

One other feature in this work calls for comment, and this we commend to those who wish to make a little writing go a long way; it is printed on the thickest paper we have ever met with in a medical work.

PART III.

SPECIAL REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.^a

By RINGROSE ATKINS, M.A., M.D.; Resident Medical Superintendent, District Asylum, Waterford.

(Continued from page 67.)

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

Neurasthenia and Melancholia.—In a paper presented in a competition for the Esquirol Prize, 1892, and “couronné,” by the Soc. Méd. Psychologique (abstr. in *Journ. de Méd. de Paris*), M. Boissier has treated of the relations of neurasthenia with depressive insanity.

Among sixty cases studied by him he made use of only those who showed the least heredity taint, and who came nearest to the pure melancholic condition without hypochondria or persecutory delusions. He classified them as nearly as possible according to their graduation, from the neurosis to the psychosis. After a rapid review of the present state of our knowledge he points out the analogy of the ætiological conditions. A succession of causes, or the continued action of one, produces first the neurasthenia, and then the melancholia as a stage of aggravation. But if there exists a sufficient acting cause to produce melancholia at first, he asks if we should not see in this only a more intense type of the same morbid condition, such as is so frequently observed in other disorders. In fact, examination of acute cases of melancholia reveals all the physical and psychic symptoms of the two disorders, but in a more intense degree than the ordinary chronic cases.

Passing next to the physical phenomena the author proposes

^a The author of this Report, desirous that no contribution to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal they will be forwarded.

the following questions—What becomes of the stigmata of the neurosis when the psychosis is established? Do they yet exist? Those that seem gone or modified, are they only hidden or exaggerated by the process that has given rise to the aggravation of the symptoms?

In depressive melancholia, he answers, all the symptoms of nervous exhaustion may exist and be combined in the same patient. Some, however, are aggravated, others unchanged, others still are modified or diminished by the immobility imposed by the psychosis.

As regards the physical characters, the general resemblance of the two conditions is such that it is difficult to certainly point out the difference, at least as a general rule. Stuporous melancholia is, after a fashion, the crystallisation of the neurasthenic condition. The patient falls into a condition of absolute abulia, and loses all his energy; he scarcely reacts at all to external impressions, and is wrapped up in his automatic sensations, and fixed impressions that form the central point of his insanity.

The author next treats of psychic asthenia. The distress and extreme emotivity of the neurasthenic are, with his general lack of energy, the factors of his timidity, and lack of self confidence. This emotivity may sometimes escape observation in melancholia, but it exists nevertheless, though with less pronounced manifestations, and is the less apparent the more depressed the patient. The outward signs, the facial expression, &c., are, to some extent, lacking. The irritability of the subject has suffered with the general depression, and the automatic reactions themselves have lost their activity. Some of these patients still dread any intercourse with strangers, and to such an extent that their tremor is noticeable even in stuporous cases. In others one can still note by the pulse, the cardiac irritation produced by emotion, or the flushing of the brow in inert and mute individuals is, perhaps, the only indication. In the anxious hyperæsthetic forms on the other hand, where the depression is not so profound, the emotivity predominates, and the least external manifestation, or internal phenomenon, arouses in the subject the most terrible distress.

The general diminution of all the energies leads to a general prostration, and, in a higher degree, it produces that stupor without delusions or ideas, without any cerebral activity what-

ever, which should be distinguished from the apparent stupor with terrifying delusions. If the unequal failures of the various energies of the faculties form, according to their groupings, the different types of the disease, the equal general deficiency of the whole, but varying in its intensity, makes the difference between the sufferer from simple, depressed nervous exhaustion and the melancholic. The one is a paretic, the other a paralytic.

After reporting fifteen observations in detail, and summing up his memoir, M. Boissier formulates the following conclusions:—Neurasthenia is a morbid entity, of which the constant symptoms—headache, insomnia, distress, tachycardia, disorders of general sensibility, depression—are in relation with those of melancholia.

Motor Disorders in Neurasthenia.—Pitrès (of Bordeaux) read a paper on this subject before the Medical Section of the French Association for the Advancement of Science, Sept. 21, 1892, which is reported in *Le Progrès Médical*, No. 40. He called attention to certain neurasthenic symptoms that have, he claimed, been wrongly attributed to hysteria. Tremor, he said, the most important of these, exists in two-thirds of the cases of neurasthenia. It is identical with that of exophthalmic goitre, is observed in the limbs, is fine, vibratory, and is apparent in the speech. It resembles the so-called alcoholic tremor, and is one of the better signs of this neurosis. The other motor troubles are less frequent; they consist in cramps more frequent by day than by night, without fatigue or apparent cause, which sometimes embarrass locomotion, and in muscular contractions which resemble those of paramyoclonus multiplex. Rhythmic spasms of the neck, of the tongue, diaphragm and contractures of the oesophagus are specially symptomatic of neurasthenia. Abasia may occur in neurasthenia and in persons showing no indications whatever of hysteria. Intermittent claudication occurs in neurasthenics. A precocious fatigue of the arm, absolutely disproportionate to the work performed, and causing momentary paralysis was observed in one patient. In the same case the knee-jerk was absent, and when this occurs with Romberg's symptom there may be a neurasthenic pseudo-tabes. Eight or ten times the pupils were quite sensitive to light and refractory to accommodation—the reverse of the Argyle-Robertson sign.

Neurasthenia is more persistent than hysteria, and its accidents

are harder to cure. It cannot be treated like hysteria by hypnotism.

Is Katatonia a special Form of Mental Disorder?—Dr. J. M. Nolan, of the Richmond Asylum (lately appointed Medical Superintendent of the Downpatrick Asylum), read a paper on this subject before the Medico-Psychological Association at a meeting in Dublin, May 26, 1892. He accepts Spitzka's definition—"a form of insanity characterised by a pathological, emotional state, and verbigeration combined with a condition of motor tension," with the addition, "running a *quasi* cycle course of expansion, hysteria and stupor." He would limit the use of the term strictly to those cases which fulfil all the conditions of this definition, and does not think that the fact that some of the symptoms of the cataleptic stage may so far colour other forms of mental disorder as to justify the term "Katatonic," detracts from the value of the specific term. He recognises four stages—depressed, emotional, convulsive, and stuporose.

The depressed stage comes on insidiously, and is characterised by a passive, drowsy, mental state, with grotesque visual hallucinations, not always of an unpleasant nature, and delusions of a mixed sexual, religious and persecutory type, which do not excite emotional disturbance in proportion to their apparent intensity. It is accompanied by anæmia, vaso-motor fluctuations, general wasting, masturbation and trophic lesions. The patient usually comes under treatment in the emotional stage in consequence of some violent outburst due to his hallucinations and delusions. The intensity of the emotion, however, soon subsides, and the "emotions evoked become pathetic, the pseudo rather taking the form of silly and shallow exhibitions of feeling, with a strong colour of religious and erotic delusion. Theatrical and declamatory speeches and attitudes are struck to give emphasis to the most common-place remarks with an effect so ludicrous that the patient commonly breaks down into a laugh, as if realising the complete absurdity of his bombastic utterances." In this stage is developed the symptom "verbigeration"—the declamatory repetition of utterly meaningless phrases, words, and syllables. This stage passes gradually into that of the stuporose, which may vary greatly in duration and intensity. It differs from that of cataleptic melancholia, in that the hallucinations, although they may be disagreeable, are not terrifying, and may be pleasant. A rigid resistance to passive

movements is more common than "flexibilitas cerea." Vasomotor disturbances are not so extreme as in other forms of stupor, and food is generally taken when offered. The nutrition may improve in this stage.

With respect to ætiology, Dr. Nolan believes general degenerative changes and hysteria to be at the bottom of the morbid states. Although he admits the importance of masturbation and sexual excess as exciting and aggravating circumstances, he does not believe them capable of any such effect in a person of originally sound organisation. In regard to the former practice he says: "From a very extensive experience of all classes of youth, sane and insane, I have found that the injurious effects of the vice named were infinitesimal in proportion to its almost universal practice." Women are comparatively exempt from this form of mental disorder.

The author does not think that any satisfactory anatomical basis has yet been found for the mental disturbances in this as in most other forms of insanity. He questions the importance of the changes reported by Kuhlbaum and others; personally he has had no opportunities for autopsies in such cases. He is inclined to suspect that defective working of the connecting fibres between the various centres concerned in speech may have quite as much to do with the peculiar disturbances of that function as disorder of the centres themselves.

The author reports five cases illustrating various phases of the malady.

Auto-Intoxication as a Factor in Mental Disorders.—At the La Rochelle meeting of the French Congress of Mental Medicine, August 1st, 1893, a report was made by MM. Régis and Chevalier Lavaure on the subject of auto-intoxications and their relations to mental medicine, the substance of which is thus given in the columns of *Le Progrès Médical*, No. 31.

The authors first recalled the three great causes of intoxication that may result from disorders in the nutrition of the organism; (1) abnormal productions of toxic matters; (2) incomplete transformation of those introduced into the organism; (3) insufficient elimination of normal and abnormal poisons—whence auto-intoxication.

They next reviewed briefly the history of investigations on this question from the ancient humoral theories down to the studies of Seleni and Gautier, of Bouchard and his school in

France. The toxic principles need to be determined and recognised, chemically and experimentally, in the normal system as well as in disease; products of cell life of our tissues or of parasitic microbean cells, these alkaloids (leucomains or ptomains) are chiefly eliminated through the kidneys, therefore they have been mainly studied in the urine and its extractive products.

It is by means of intravenous injection that the great rules of experimentation have been determined, account being taken of the time passed during the injection, and of the body-weight of the animal experimented on, in comparison with the quantity injected. But the toxicity of the urine is in inverse proportion to that of the serum, and the other products of the physiological secretions and excretions.

The elements of the poisoning of the organism are, therefore, multiple: besides the toxalbumins, proteins, diastases, etc., we must take account also of the mineral substances—potassium, sodium, acids. As Bouchard says, man is the receptacle and laboratory of poisons. Applying these facts to psychiatry and neuropathology, the authors state the following conclusions: (1) The toxicity of the urine is notably diminished in maniacal and augmented on the contrary in melancholic conditions. Further, the urine of maniacs and that of melancholiacs have different actions on the animals in whom they are injected: the former causing chiefly excitation and convulsibility, and the latter depression, inquietude, and stupor: a positive proof that auto-intoxication is the cause and not the effect of the mental state, as has been often verified in certain auto-toxic maladies, eclampsia for instance. We often find in insanity an inverse toxicity of the urine, and the blood, in mania especially, is as much more hypertoxic as the urine is hypotoxic.

(2) These results which, incomplete as they are, show by their almost perfect concordance that the phenomena of auto-intoxication play an important part in mental diseases are confirmed by recent nosological investigations on the insanities of the acute infectious diseases, and those of the visceral and diathetic disorders. As far as the psychoses of the infectious disorders are concerned, they are the result either of the direct action of the microbes or of their mediate and indirect action through the toxins they secrete. In a clinical point of view, they may present themselves at two different periods, and

consequently under two different aspects. During the febrile stage they ordinarily take the form of an acute delirium. During the post-febrile stage, or during convalescence, we have the so-called asthenic psychosis, a more or less variable mental condition, consisting usually of a mental confusion, stupidity, clouding of the faculties, a pseudo-dementia: possibly it will be proper to admit the existence of a third form intermediate between the two preceding.

The visceral psychoses are also undoubtedly due in large measure to auto-intoxication. They are even, to speak truly, genuine insanities from auto-intoxication.

We may say that where the intoxication is acute it habitually shows itself as an acute toxic delirium, resembling alcoholic delirium (this is the case with uræmic insanity): when the intoxication is slow and chronic, it ordinarily induces a melancholic condition: lastly, we may see cases recalling more or less parietic dementia.

The diathetic psychoses, although included in the insanities from auto-intoxication or infection, have not been the subject of extensive studies. During the acute episodes these attacks also take on the type of acute toxic delirium; these attacks seem to correspond to variation of composition of the organic liquids (uric acid discharges preceding the end of the attack, and urinary hypotoxicity).

General or local anti-infectious antiseptic treatment—and this is a powerful argument in favour of the toxic origin of these disorders—gives here excellent results. Although it is not possible to formulate a definite therapeusis, there are, nevertheless, enough facts to show that in the infectious or auto-toxic insanities we must resort to the treatment of the infection or the auto-intoxication to relieve the mental disorders.

In the discussion which followed M. Séglas reported observations of fourteen cases of mental derangement, in which there seemed to be a direct connection between an auto-intoxication and the disorder. In all these the clinical type was that of primary simple or hallucinatory mental confusion passing to simple mental torpor, or to complete stupor. Simultaneously there were somatic disturbances of various kinds. M. Séglas concluded that, in all the observations of the nature of the occasional causes, the identical symptomatology and the action of certain therapeutic agencies seemed to plead in favour

of the auto-intoxication hypothesis; its absolute demonstration could not be said to have been made. Chemical and experimental results are as yet uncertain and incomplete. The question is only opened upon, and is yet very far from settlement.

The subject was further discussed by MM. Charpentier, Legrain, and others in favour of the theory of auto-intoxication.

Histology of the Nervous System in Paralysis Agitans and Senility.—Ketscher (abstract from *Zeitschr f. Heilkunde*, Bd. XIII., H. C. 62) has examined the central nervous system in three cases of paralysis agitans. In all there were morbid changes—the specific elements showed atrophy of varying degree; the cerebral ganglion cells were strongly pigmented, rounded, and here and there in a state of granular degeneration: the spinal nerve fibres, especially those in the posterior columns, were degenerate and atrophied, and had completely disappeared here and there, so that holes were present; the same condition was observed in the peripheral nerves. The interstitial tissue in cord and peripheral nerves was much increased. The vessels were much altered, the walls thickened, miliary aneurysms were found here and there, together with small hæmorrhages: the adventitious sheaths were seen to be bulging in places, and the bulgings filled with round cells and lymph. These changes are similar to those described by other authors. Conjecturing that they might be due merely to senility, Ketscher examined the nervous system of ten old persons free from paralysis agitans. He found changes which did not differ qualitatively at all from those present in the cases of paralysis agitans, though they were less marked. Ketscher is, therefore, of opinion that this affection is merely the expression of unusually pronounced and possibly premature senility. He believes that the blood-vessels are primarily the nerve elements secondarily involved.—(*Am. Journ. of Insanity*, Oct. 1893.)

[In estimating the pathological import of changes such as those above described, the possibility of their being sequential to the primary disease, and brought about by the *vis inertiae* imposed upon the organism by that disease, must be carefully excluded; certain of these changes also may be produced artificially by the methods used in preparing specimens for examination.—*Rep.*]

Post-mortem appearances in a fatal case of Progressive (Hereditary

so called Huntingdon's) Chorea.—Drs. Kronthal and Kalischer found the following pathological appearances in a case of this malady. The patient became choreic in her thirtieth year, and remained so until her death, at the age of forty-five. There was a strong family history of chorea. 1. Dura mater strongly adherent to skull cap, especially over the frontal region. 2. Adhesions between dura and pia. 3. Extensive rind-like thickening of the pia with small cell infiltration, and much vascularity; also formation of lamellæ in the parts of the membrane covering the convexity of the brain, and the front boundary of the spinal cord. 4. Adhesion of pia to cerebral cortex, especially in the frontal region and over the central gyri. 5. Slight atrophy of frontal lobe, with marked narrowing of the gyri (presumably frontal; this not stated). 6. Much vascularity of the cortex, some vessels having their walls thickened, and small-celled infiltration round the walls. 7. Holes in the lenticular nucleus (presumably produced by falling out of blood-vessels or secondary hæmorrhages). Blood extravasation and pigment deposit about the vessels here; vessels blocked by organised clot. 8. The nucleus tegmenti of one side almost devoid of cells and nuclei. 9. Blood extravasation about the point of exit of the third nerve fibres. 10. Scattered points of degeneration in the crura cerebri. 11. Sclerotic foci in the grey matter of the ventricles. 12. Slight unilateral degeneration of the facial and hypoglossal nuclei, and degeneration of the ascending root of the fifth, and the nucleus piniculi teretis of one side. 13. Diffuse degeneration of the pyramidal tracts of pons and medulla. 14. Slight diffuse degeneration of lateral and anterior columns of the entire cord, as far as the lumbar region, degeneration of the inner part of Goll's columns in the lower cervical and upper dorsal regions. 15. Slight degeneration of the cells of the anterior horns of those of Clarke's columns and of the anterior spinal roots. 16. Circumscribed sclerosis in the commissure between the central canal and one anterior horn, in the mid-dorsal region. 17. Deficiency of chromatogenous substance in the ganglion cells of the cerebral cortex. 18. Very slight degeneration of the peripheral nerves.

The authors are not prepared to express an opinion concerning possible causal connection between any of these morbid conditions and chorea.

Pathology of Muscular Atrophy in Hemiplegics:—The spinal

cords of two cases of hemiplegia with muscular atrophy were examined by Joffroy and Achard (*Arch. de Méd. Exper. et d'Anat. Path.*) In the first, which had lasted for two years, only slight changes were found in the cells of the anterior cornua; in the second, of 27 years duration, they were decidedly atrophied. On the ground of these and similar cases the authors reject the theory that atrophy in such cases is due to neuritis, or to disturbances in cortical trophic centres, and believe that there is invariably an alteration of cells of the anterior cornua under the influence of the diseased pyramidal tracts. The contractures they consider as evidence of irritation of these cells. If exhaustion takes place the result will be atrophy of muscles whether or not there is demonstrable lesion.—(*Am. Journ. of Insanity.*)

IV. NEURO-THERAPEUTICS.

Nervous Transfusion in Insanity.—Cullere (*Gaz. de Paris* Aug. 27, 1892) reports eight cases of insanity, nearly all in a critical physical condition, and several in one mental and bodily hebetude, in whom he practised the method introduced by M. Constantin Paul, of injecting hypodermically a preparation from the grey matter of the sheep's brain. He macerated the fresh brain substance from an animal recently killed, for twenty-four hours in twice its weight of pure glycerine, then adding an equal quantity of boiled water he obtained by filtration, a preparation of the strength of one fifth. The injections were invariably four grammes (3i.) of this liquid, which was renewed every week, and were given at intervals of two days, the selected points for their insertion being the flanks or the dorso-lumbar region. The spot chosen for the injection was previously washed with a strongly carbolised water, and the syringe was carefully disinfected. Although he did not use Arsonval's method he claims that his precautions were such that in over five hundred injections there was not a single accident of any kind.

In all the cases here reported there was a marvellous improvement in the physical condition, but the mental disorder was either only temporarily benefited or not at all. Six other cases were treated in the same way, three of them being melancholiacs who underwent a decided improvement as regards their appetite, &c. In one case of hydræmic cachexia of long standing they results were *nil*; the same was the case with a patient suffering from intermittent mania with pyloric cancer.

In one melancholiac there was only temporary improvement. The author sums up his conclusions in the following propositions.

(1.) Nervous transfusion (I advise what I have not myself been able to do, the employment of the procedure of Arsonval to insure the sterilisation of the liquid) is well tolerated in debilitated and even in tuberculous insane individuals, and arouses almost instantaneously the nutritive functions.

(2.) The first sign of this awakening was an improved appetite, which some patients are hardly able to satisfy. This particularity may be of great value in insanity in combating sitophobia, and I have been enabled to avail myself of it in many patients who had systematically refused food.

(3.) The reconstituent effects are rapid in appearance; the muscular weakness disappears, *embonpoint* develops, and all the organic functions become more regular.

(4.) The psychopathic condition in curable cases has been sometimes temporarily improved during the hours immediately following this injection, but this effect has never been lasting, and no permanent amelioration has been obtained. Nevertheless, I do not consider this as definitely settled, the majority of the cases treated not being such as allowed a favourable prognosis. It is the rule, in fact, that in cases of curable insanity, when the nutrition begins to improve, the mental symptoms also are modified in a parallel manner.—(*Am Journ of Insanity.*)

Vibrations in the Treatment of Nervous and Mental Disease.—M. Gillies de la Tourette, following the lead of M. Boudet, of Paris, and earlier observers, has experimented with the effect of vibrating on the nervous system. He has devised a sort of cap, made to conform itself to the shape of the cranium, with which, by means of a small electric motor, uniform, light and rapid vibrations may be made over the whole surface covered by the apparatus. The whole head vibrates, as can be felt by putting the hand on the mastoid process. A simple arrangement permits such regulation of the number and fulness of the vibrations as may be desired. Placed on the head of a healthy person, it causes no inconvenience or discomfort, but soon produces a sort of general benumbing, that is almost invariably followed by sleep. About ten minutes application in the evening was found to produce a good night's sleep. Eight or ten *séances* sufficed to relieve insomnia when not due to organic encephalic disease.

Three cases of neurasthenia were treated, two of whom were cured, and the third discontinued the treatment improved. The head symptoms disappeared, and that the method acts through the brain seemed to be shown by the fact that in a case where the spinal phenomena were predominant, the weakness of the legs, the sacral *plaque* and the relative sexual impotence disappeared without having recourse to any spinal applications. In this patient static electricity had notably failed.

There seems to be, according to the author, no doubt that this method is a powerful sedative to the nervous system, and the suggestion is made that its effects may be advantageous in certain forms of mental disease. In one case of melancholia its use appeared to be decidedly advantageous in arresting the progress of the disorder that had before shown no signs of improvement.—(*Am. Journ. of Insanity.*)

The Surgical Treatment of Idiocy.—At the Session of the Congress of French Aliénists, Aug. 1892 (*Progrès Méd.*, No. 33), M. Bourneville read a paper on the surgical and medical treatment of idiocy. He exhibited eleven crania showing that in none of the types of idiocy to which M. Lannelongue applies indiscriminately the treatment by craniectomy are there any synostoses, and consequently the operation has no anatomical indication; it is useless, and the results so much vaunted are non-existent. One of the first patients operated upon by M. Lannelongue came later into the idiot department of the Bicêtre, where he died, and his cranium at the autopsy showed no synostoses. If the operation is not beneficial it is hurtful, as in this case there were found meningeal adhesions at the points of operation. It is, on the whole, better to keep to the medico-pedagogic methods, of which M. Bourneville exhibited some of the results. It is to this treatment, in part, that should be credited the transient betterment attributed to craniectomy; the patients' benefit by the attention they receive as surgical cases.

In reply to a question by M. Gilbert Ballet, M. Bourneville said he had never seen a case where development of the cranium was hindered by premature synostoses, but such cases had been reported.

M. Régis, in the discussion following, thought that M. Bourneville's paper was the more important since craniectomy was coming into fashion even in the provinces. He had himself seen one case operated upon without any good result.

A New Method of Treating Epilepsy.—Paul Flechsig adopts the following mode of treatment which he considers more efficacious than any hitherto employed. In the first place small doses of opium (powder or extract) are administered, and these are gradually increased in strength. The opium treatment is continued for about six weeks and then suddenly stopped, being replaced by bromide in large doses. At the end of two months the dose of bromide is gradually diminished and small doses are then taken regularly. The essential point of the treatment seems to be the sudden withdrawal of opium and its replacement by bromide. The former drug appears to prepare the way for the latter, and to render the bromide effect more intense. Fits are usually noticed to disappear shortly after the commencement of the bromide treatment. Flechsig at the conclusion of this the preliminary paper, reports a severe case of epilepsy in which this treatment was employed with striking success.—(*Neurol. Centralblt.*).

MALDEÏN.

A NEW anti-rheumatic remedy, maldeïn, one of the coal-tar series, is recommended for acute and chronic articular rheumatism. Dr. Jacquet states that it produces neither headache, singing in the ears, vertigo, nor digestive troubles. Four to six doses of 15 grains each are given daily. The gastric juice decomposes the chemical into salicylic aldehyde and phenacetin. It exerts little influence on neuralgia.—*Répertoire de Pharmacie*, No. 10.

GUAIACOL.

GUAIACOL administered hypodermically is stated to reduce the temperature by 2.3° C., the effect being produced very gradually. Five minutes after the injection the patient felt the taste of guaiacol in the mouth, and in an hour's time the drug could be detected in the urine.—*Les Nouveaux Remèdes*, No. 17.

URINE.

M. CARLES, in *Répertoire de Pharmacie*, No. 9, contributes an interesting article on the variations of diurnal and nocturnal urine, pointing out some well-marked differences in the secretion taking place during the day and during the night in diabetic and other patients. He recommends that the whole amount of urine passed in the twenty-four hours should be mixed, and then a sample taken for analysis. There is nothing new in this idea, but he is deserving of thanks for producing evidence of the differences that occur during the twenty-four hours in urine.

A Perfect
Incorporation of a
Sufficient Quantity
of
CARNRICK'S
Cod Liver Oil Milk.
Cod Liver Oil is a
Nutritive
and Emollient
Menstruum.

We submit this preparation as a contribution on the part of the pharmacist to the task imposed on the Physician of giving a Cod Liver Oil that will not arouse the repugnance of the patient, not interfere with the digestive processes, and that presents in a full degree the specific properties of this valuable fat-forming agent.

Palatability. In dealing with the question of taste, it would be hopeless for anyone to dogmatise, and assert that any one preparation or combination will be liked best by everyone, but we believe a trial will show that Carnrick's Cod Liver Oil Milk satisfies and soothes the susceptibilities of the many.

Digestibility. In regard to the therapeutic advantages afforded by this preparation, note must be taken first of its superior assimilability. Experience teaches us with sad emphasis that many a patient whose hope lies in Cod Liver Oil, gets no benefit from its use, and that a large number again show but slight improvement, even under the regular and long-continued administration of the oil. This absence of effect, it seems to be agreed, is to be put down in many cases to imperfect absorption of the oil. Even when the oil is tolerated, it is not always assimilated, and as observation has shown, is frequently voided undigested. That is one of the difficulties we have sought to meet in "Cod Liver Oil Milk." On a subject of such uncertainty as the process by which fats are digested in the body, we do not presume to formulate theories. Perhaps the simplest, and most likely explanation is that the change which precedes the assimilation of fat, is a purely *morphological* one, and that, when the fatty particles are broken up into infinitely small globules, they are then in a condition to be absorbed by the leucocytes. If we adopt this view, we shall find in Carnrick's Cod Liver Oil Milk the natural process of digestion anticipated, and as a corollary, the failure to assimilate the oil is obviated.

**Superior effect
of Carnrick's
Cod Liver Oil
Milk.**

From the foregoing, one or two deductions are obvious. Cod Liver Oil in this palatable, assimilable form, produces naturally a greater effect, once for a once, than the plain oil. Less of Carnrick's Cod Liver Oil Milk is requisite to build up a patient than of the plain oil. But not only is that the case, but the patient can tolerate a greater quantity, and the advantage of such an agent in the task of building up a depleted system, or coping with a failing nutrition, will be readily appreciated.

We submit that a trial of "Cod Liver Oil Milk," will substantiate:—

- (I.) That the oil is rendered palatable and does not give rise to acid eructations.
- (II.) That by the breaking up of the oil globules, the oil is rendered thoroughly digestible, even when the patient's assimilative functions are weak and disordered.
- (III.) That it is a most effective way of exhibiting the fat-forming properties of Cod Liver Oil.

It is in fact, what its name connotes, a preparation, which by a carefully devised process, has been brought to the appearance, consistency, and palatability of milk, and constitutes a therapeutic implement, that, under the Physician's direction, will be productive of the best results.

**Carnrick's
Cod Liver Oil Milk
with Hypophosphites
of Lime and Soda.**

This combination will be found very useful in cases where Cod Liver Oil is indicated in conjunction with the hypophosphite salts. The association of bone-forming material with the fat-making principle of Cod Liver Oil is recommended by the highest authorities, and its value has been conclusively proved in practice.

In 8 oz. and 16 oz. Bottles, 2/6 and 4/-. Special Terms to the Profession and Hospitals.

Samples Free to Medical Men.

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PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—GEORGE H. KIDD, M.D., F.R.C.S.I.

General Secretary—W. THOMSON, F.R.C.S.I.

SECTION OF MEDICINE.

President—WALTER G. SMITH, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. MONTGOMERY, M.R.C.P.I.

Friday, November 17, 1893.

The PRESIDENT in the Chair.

Clinical Notes.

The PRESIDENT, Dr. Walter Smith, brought forward some clinical notes of recent cases.

He first showed photographs of a case of elephantiasis of the left leg in a young man, aged twenty-five, and also of another case which had been successfully operated on by Dr. Ball by excision of wedges of tissue from the limb. The results of the operation were most successful.

The next case was one of inflammation of the right breast, in a woman aged thirty, and in the 4th week of enteric fever. The inflammation resolved quietly in a few days, and Dr. Smith regarded the mastitis as probably analogous to the cases of parotitis or orchitis which occasionally complicate enteric fever. The complication of mastitis had not, to Dr. Smith's knowledge, been previously recognised.

The third case was one of aortic patency. The special point about it

was the occurrence of a powerful and diffused thrill accompanying the *diastolic* murmur. This is a rare occurrence, and Walshe met with it only once.

The last topic introduced was the question of the early diagnosis of scarlatina, and the difficulties that beset it. Some illustrative cases were narrated, and it was pointed out that our perplexity is increased by the responsibility cast upon us by the compulsory notification of infectious diseases.

DR. TWEEDY said he wished to mention a case somewhat parallel to Dr. Smith's case of mastitis occurring as a sequela in typhoid fever. This was a painful swelling which occurred in the mamma of one of his patients at the approach of the menstrual period and disappeared when it was over. It occurred with great regularity, and Dr. Cruise, who saw the case with him, considered it was one of "painful mammary tumour." As regards the difficulties met with in the diagnosis of scarlatina in its early stages, he mentioned some mild cases occurring in the Royal Irish Constabulary Depôt, Phoenix Park. They came into hospital with a temperature of 102° , which only lasted one night; they had some sore throat and headache, sometimes a slight rash over the sternum, and sometimes some desquamation followed.

DR. J. W. MOORE mentioned that he had at present under his care a young girl who, when convalescing from typhoid, developed an acute inflammation of the left breast. This subsided under poultices, and it was noticed that there was great dilatation of the veins while it was disappearing. The patient alluded to by the President as suffering from aortic disease, is at present in the Meath Hospital. He has had several attacks of hæmoptysis and also of angina pectoris.

DR. DRURY mentioned two interesting cases illustrating the difficulty in the diagnosis of scarlatina. One was a child three years old, who was attacked with vomiting and headache and sore throat one morning. In the evening a rash came out. He saw it the following morning, and there was a bright punctate rash on the chest. T. 102° , P. 152. By the end of a week the temperature was quite normal. The curious part of the case was that no desquamation took place. The second was a similar case as regards desquamation, and it was also remarkable that from the time he saw it, which was the day after the rash came out, there was no rise of temperature or acceleration of pulse. The following week the child's nurse was laid up with undoubted scarlatina.

DR. BURGESS narrated a case which apparently commenced as tonsillitis, but in 5 or 6 days a rash came out all over the patient's body. The patient's three children were laid up with scarlatina within a week.

DR. BEATTY said he had never met with a case of aortic patency in which a thrill was perceptible over the base of the heart.

The PRESIDENT, Dr. Walter Smith, briefly replied.

Warty Disease of the Legs.

DR. H. C. TWEEDY exhibited a case of extensive warty growths completely encircling both legs and separated by sharp lines of demarcation from the healthy skin above, and from the feet by a greatly thickened roll of integument.

The patient was a man, fifty years of age, a groom by occupation. He had contracted syphilis fourteen years previously. This had been followed by ulceration and swelling of the legs, and subsequently by the formation of extensive warty growths between the lines of demarcation mentioned, and above were scattered tubercles and one large raw-ham-coloured plaque in the right popliteal space.

Dr. Tweedy expressed his opinion that the disease was of syphilitic origin—first, from the history of the case; secondly, from the continuity of the disease; thirdly, from the admitted fact that morbid processes, like syphilis, &c., are liable to develop papillary growths under certain favouring conditions; and, fourthly, by the great improvement that was produced by the use of potassium iodide which was causing retrogression and absorption of some of the tubercles.

DR. SMITH said that he thought the diagnosis of the disease as a syphilitic lesion was an open question. He would be inclined to class it as a case of “elephantiasis,” remembering the loose way in which that term was applied.

Pernicious Anæmia.

DR. CRAIG exhibited a case of pernicious anæmia, and subsequently read a paper on the subject. [It will be found in Vol. XCVI., page 489.]

DR. GRAVES wished to know whether the colour of the patient's skin was peculiar. In all the cases he had seen the skin had a faint lemon colour.

DR. LITTLE said that he had noticed that this disease occasionally affects members of the same family. Many years ago he attended a lady suffering from it, and who died; four or five years afterwards her sister died from the same disease, and in a few more years their brother died of it. They were all about the same age at the time of their deaths. He remembered seeing a case in the Adelaide Hospital in which the patient had severe pyrexia when he died. In the early stages of the disease the diagnosis lay between cancer of the stomach and pernicious anæmia, and it was only after a lapse of time that a positive diagnosis could be given.

DR. CRAIG, in reply, stated that when the patient came to him his skin had a very yellow tint.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—RICHARD D. PUREFOY, M.B. Univ. Dubl.

Sectional Secretary—F. W. KIDD, M.D.

Friday, November 24, 1893.

The PRESIDENT in the Chair.

Exhibits.

The PRESIDENT exhibited a large ovarian cyst removed from a patient who had been the mother of several children, and believed herself to be pregnant again; the increased size of the abdomen suggested nothing else. He gave her some tonic medicine, and after three months she returned complaining that she had had a fall and that the child was displaced. He still did not examine her, but on her return a week afterwards he found, on examination, that it was a very large ovarian cyst and not pregnancy. Although there was no complaint of pain, of vomiting, or of sickness, still the cyst was closely adherent to the abdominal wall, and the adhesions were broken down with considerable difficulty. The patient now enjoyed capital health.

The second specimen of myoma illustrated the considerable difficulty in distinguishing between a solid ovarian tumour and a uterine myoma with a long pedicle. The tumour was removed from a patient of middle age; it was easily felt, very mobile and evidently having a long pedicle half an inch in thickness. On opening the abdomen the tumour proved to be not a solid ovarian tumour, as some of them had thought, but a uterine myoma with a long pedicle. The subsequent history of the case was very sad. There was no difficulty whatever with the operation. The pedicle was transfixed and ligatured. The pulse remained normal for three days after the operation. On the fourth day it became more rapid, and with a very trifling rise of temperature—rarely above 100°—the patient gradually sank and died on the eighth day. There was no vomiting and no diarrhoea, and he was still quite at a loss to account for the untoward ending of the case.

DR. F. KIDD inquired as to whether there was a *post-mortem* held in the case, and the President answered in the negative.

MR. M'ARDLE exhibited a simple ovarian cyst removed ten days ago, and the patient was now quite well. He then exhibited a case of femoral hernia containing an ovary. He diagnosticated it as omental hernia. The presence of a glandular mass lying on the surface of the tumour added to the difficulty of diagnosis. The symptoms were those of a strangulated femoral hernia. When he cut down on it the sac came off entire and the tumour was left as a smooth mass. Then for the first

time it struck him that the tumour was an ovary. He then took away the tumour, closed the opening in the sac and closed the femoral ring. He held that he was justified in depriving this girl of an ovary, because the opening was so small that he could not return it. Besides, it would be impossible for him to return it without cutting Poupart's ligament, and thus inflicting upon the girl a life-long trouble, because he knew of no means by which you could prevent a hernia after having cut Poupart's ligament.

He next exhibited a specimen of a sac removed in the cure of ventral hernia following laparotomy.

The PRESIDENT said the most difficult question to decide was as to the removal or otherwise of the ovary. He took it that Mr. M'Ardle endeavoured to replace the ovary, and finding that impossible, removed it.

MR. TOBIN said that, as an operating surgeon, he would like to get their opinion on one point—that was, where the ovary was capable of being returned into the peritoneal cavity, whether it would be well to do so or not, as there was a liability to its forming adhesions to the peritoneum, where it had recently been lying.

DR. A. J. SMITH said the question that presented itself to his mind was whether this case should not have been operated on by an abdominal section, as probably this ovary might have been an accessory one. If they operated from above they could easily see whether there was a second ovary, and whether it might be possible to draw back the mass.

DR. MORE MADDEN said that, as far as his experience went, ovarian hernia—i.e., displacements of the ovary, apart from those due to ovarian disease, were the most frequent of the troubles that were met with in every-day gynecological practice. He believed that these displacements were very commonly neglected, and their symptoms generally ascribed to other intra-pelvic morbid conditions. He said these displacements, although occurring in the femoral and inguinal regions, were most frequent in the retro-uterine *cul-de-sac*. He thought they should follow some rule as to the treatment of these displaced organs. If they were the cause of great trouble and pain, especially increased at the menstrual period, and leading to reflex nervous symptoms, he thought they should follow the practice which Mr. M'Ardle adopted and remove them.

DR. ATTHILL thought that these cases were exceedingly rare, and he himself had never seen one of them. He believed they were cases more for the surgeon than for the obstetrician or gynecologist. Although he himself was one of the first to commence abdominal surgery in Dublin, still he thought now the tendency was to go too far in that direction. With regard to Mr. Tobin's question, he thought that in such cases as this the ovaries should be removed.

DR. A. J. SMITH next exhibited two specimens of ovarian cyst. He said one was taken from a girl, aged seventeen, who made a good

recovery. It was a simple cyst of the ovary. He said the interesting point about it was that the woman did not know that there was anything wrong with her, or that she had a tumour.

The next case was of more interest. The patient was married eleven years and had no family. Three years ago she began to complain of pain in the left side, and she also felt something "wobbling about" in her abdomen. On examination under ether, he, in conjunction with Drs. M'Ardle and Horne, found a fairly solid ovarian tumour. On passing the sound it went such a distance that he was afraid it was a fibroid tumour. On abdominal section they found an ordinary ovarian tumour, and on pulling out the cyst he noticed that the Fallopian tube was distended into little sacculations quite distinct, and the tube was so patulous that the sound could be passed through it. He had probably, when using the sound, passed it into this patulous tube.

DR. HORNE said that they found that the sacculations contained little collections of pus. The point of interest was the extreme patency of the Fallopian tube, and the presence of these little sacs of pus, with intervals between the sacculi of normal tissue. The patient was now three weeks without a rise of temperature.

President's Address.

The PRESIDENT then delivered an opening address. He briefly reviewed the history of the study of Medicine and Surgery in Ireland from a remote date, noting the fact that there was historical evidence of medicine having been studied and practised here more than a hundred years B.C. He dealt more in detail with the rise of the Dublin School of Midwifery and Gynæcology and the establishment of the Rotunda Hospital in 1745. He alluded to names and writings of the many distinguished obstetricians who have since flourished in this country. The dates of the foundation of most of the British lying-in hospitals were mentioned, and also the strange fact that so late as 1854 Mr. Guthrie informed a Committee of the House of Commons that "no instruction was given to midwives in England."

Ventral Hernia.

MR. M'ARDLE read a paper on this subject. [It will be found at page 101.]

DR. A. J. SMITH said when he last read a report of abdominal section before this Section he had ventral hernia in two of his cases. One of the explanations then given was that he had abscesses in the track of his sutures, while another was that there was bad adaptation of the surfaces together. The difficulty was how subsequently to treat them. He said there was no abscess whatever, but after a month or so this accident occurred on very slight exertion. In one of the cases you could

dip in your finger as if the sutures cut their way through everything. He then dissected the skin flap, split it, sutured, &c., and the patient was now quite well.

The next operation was one he performed last January on a patient who had a fibroid tumour. There was no necessity to remove the fibroid, but there was to remove a small umbilical hernia which, on one occasion, nearly caused her death. He performed the same operation—dissected the skin, passed strong sutures through the peritoneum, stitched the aponeurosis of the flap, and union was so good that all last autumn she was engaged pitching hay in the meadows. He did not believe that abscess was the cause of ventral hernia at all, and he agreed with Mr. M'Ardle that the retraction of the elastic aponeurotic fibres of the middle stratum seemed to be the most important with reference to the union in abdominal sections.

Further discussion on this interesting paper having been postponed to next meeting owing to the lateness of the hour,

The Section then adjourned.

SECTION OF PATHOLOGY.

President—J. A. SCOTT, M.D.

Sectional Secretary—J. B. STORY, F.R.C.S.I.

Friday, December 1, 1893.

The PRESIDENT in the Chair.

Hydrocephalus.

DR. O'CARROLL showed a hydrocephalic brain taken from a boy, thirteen years old, who had died suddenly after a week of illness, of which the most prominent symptoms were morning vomiting and headache. No cause for the sudden death could be found. The hydrocephalus had existed from about the 9th month after birth. The anatomical cause of the hydrocephalus seemed to be an abnormally thick (4 mm.) and perfectly imperforate inferior medullary velum, which bound the medulla closely to the cerebellum. It was uncertain whether this was a congenital or a post-natal condition. A history of a comatose attack, lasting forty-eight hours, at about nine months after birth, and of the swelling of the head, having begun only then, seems to suggest that the condition supervened towards the close of the first year of extra-uterine life.

Urinary Organs from a case of Cystitis, with Surgical Kidneys.

DR. M'WEENEY showed the urinary organs of this case, which was that of a man, aged thirty-five, who was admitted to the Mater Miseri-

cordiæ Hospital, under the care of Dr. Boyd and Mr. Hayes, suffering from fever (102°) and complete inability to pass water, with great pain in urethra and hypogastrium. He had had gonorrhœa twenty years ago, followed by stricture. The urgent symptoms having been relieved by supra-pubic tapping, a catheter was with much difficulty introduced. Shortly afterwards patient got gradually weaker, his temperature fell to 96°, and he died with symptoms pointing to uræmia on the 30th October. The prostate was found enlarged, and its glandular apparatus changed into a series of abscess-cavities filled with viscid grayish muco-pus, in which were suspended hundreds of black gritty calculi of irregular outline and averaging the size of a millet seed. The bladder was greatly thickened and sacculated, and the mucous membrane was in places coated with a sort of diphtheritic exudation. There was no tendency to the deposition of phosphates. Many of the sacculi contained muco-pus. The kidneys were deeply congested, and the cortex was thinned and presented numerous small white patches. The right ureter was dilated in its lower fourth, and the wall was intensely hyperæmic; but no obstruction could be found save perhaps at the orifice of the ureter, which was narrowed. The microscopic examination of the kidney showed extensive small-cell infiltration; atrophy of glomeruli, with conversion of some of them into masses of hyaline material; loss of epithelium and shrivelling of convoluted tubules, with disappearance of nuclei in many of the cells that remained; hæmorrhages into tubules as well as into interstitial substance; and colonies of bacilli not demonstrable by Gram's method, and similar in appearance and arrangement to *Bacillus coli*. The mucous membrane of the bladder showed loss of epithelium, phagocytosis in the submucous tissue, with extensive hyaline changes. The prostatic calculi had been analysed by Mr. Adeney, of the Royal University, and found to consist mainly of phosphate and carbonate of calcium and magnesium, with a quantity of combustible nitrogenous matter. The exhibitor drew attention to the views of Posner, Jürgens, and others regarding the origin of prostatoliths.

The PRESIDENT mentioned a similar case he had examined. The history was much the same, and on *post-mortem* examination he found small white spots in the kidney, which proved to be granulomata. He found also pus cells and cocci in the kidney.

DR. FINNY suggested that the disease of the aortic valves might be due to a diphtheritic inflammation. If this were so, many of the symptoms of the case would be explained. He asked if there was any evidence of a co-existent disease which might explain the hyaline degeneration in the kidney.

DR. NIXON asked was there any connection between the prostatic venous plexus and the concretions exhibited. Concretions, he said, were often found in connection with it.

DR. M'WEENEY, in reply, stated that the aortic disease seemed to be of long standing, and that there was no evidence of secondary suppurative foci in any of the viscera. The micro-organisms he found in the kidney were bacillar, and he believed ulcerative or diphtheritic endocarditis was caused by cocci. He had no evidence in the history or the *post-mortem* appearance of any co-existent disease to account for what was found in the kidney. As regards Dr. Nixon's question, it seemed to him, on a rather cursory examination, that the concretions were in the midst of prostatic substance.

Apoplexy of Mesentery.

MR. F. A. NIXON exhibited a specimen of apoplexy of the mesentery, taken from the body of a woman, aged sixty, who had been found in a dying condition at foot of the steps of her residence. She had, some time previously, undergone a slight operation for disease of the cervix uteri, and while convalescing had suffered from an apoplectic seizure, with hemiplegia. More than a foot of the small intestine was surrounded by soft blood-clot; the vessels generally were atheromatous. There was hæmorrhage into the left broad ligament, also into the left inguinal canal. There was slight hæmorrhage from the vagina. There was no evidence of external injury.

DR. M'WEENEY described a case in which there was thrombosis of the superior mesenteric vein, with great dilatation of its tributaries and intense congestion of the portion of intestine from which the veins sprung. This was in a state of hæmorrhagic infarction, and there seemed to have been a weeping hæmorrhage into the bowel, for it contained about a quart of blood. The patient was a girl, who came in with an abscess in her neck, and after it had been opened developed erysipelas. She went on well for a few days, when she was seized with violent pains in her stomach, and died in a few hours.

Dilatation of the Stomach and Ptosis of the Transverse Colon.

DR. H. C. TWEEDY exhibited a case of dilatation of the stomach with enteroptosis of the transverse colon. [It will be found at page 118.]

DR. SCOTT called attention to the fact, which this case illustrated, that it was not in cancer of the stomach only that hydrochloric acid was absent from the gastric secretion. This man seems to have lived, as it were, on potatoes, and as the stomach does not digest potatoes, the gastric juice would be of no use and so would cease to be secreted.

DR. FINNY thought that the dilatation might be due to muscular debility or congenital malformation. The mere mechanical cause seemed to be an insufficient one. The close connection of the transverse colon with the stomach might have something to say to it, as this is sometimes very long, and would, when full, exercise considerable traction.

The Section then adjourned.

LECTURE.

*The Use and Abuse of Alcohol.** By SURGEON MAJOR P. H. FOX,
F.R.C.S.I., L.R.C.P.I., D.P.H., &c.

THE use and abuse of stimulants, whether regarded in a military or a social sense, is a subject of very great importance. Because, I think I am safe in saying, scarcely one man in a hundred of the spirit drinking community ever considers what are the beneficial or pernicious effects of alcohol. Most soldiers drink because they like it, and never for a moment reflect on the consequences. The majority regard beer as a necessity, and they drink—often to great excess—believing it cannot do them harm and that it is essential to the life of a soldier.

There are a great many advocates of total abstinence—good, sincere, philanthropic men. They condemn the use of alcohol in any quantity, shape, or form. They believe there can be no medium course. They regard the spirit drinker as totally ruined and lost. Like the hound that once tastes blood they believe there is no stopping him. During the temperance movement of the late Father Mathew of Cork the cry was—“Teetotalism or not teetotalism.” Things have altered, and now the cry, in the army at all events, is “temperance or not temperance.”

I need scarcely say that, in common with my professional brethren, I am an advocate of temperance. But let it be distinctly understood that I draw the line between temperance and total abstinence. By temperance I mean the use of alcohol as a diet-drink, in such small quantities as are found and proved to be beneficial to health. By intemperance I mean the abuse of alcohol, and by total abstinence its avoidance altogether. We have, therefore, three classes to deal with—viz., the total abstainers, the temperate, and the intemperate.

It would be very much simpler and easier to discuss the subject from opposite points of view—that is to adopt Father Mathew’s cry and plead for teetotalism or nothing. We could then talk of the blessings and comforts to be obtained by avoiding the noxious thing altogether, or we could tell of the poverty, crime, and misery caused by the free and unrestrained abuse of alcohol. However, I prefer to take the medium course and make out as clear a case as I can in favour of temperance and moderation; but, before going further, it is necessary to explain what alcohol is, how much could be taken as a diet-drink, its effects, &c.

Alcohol is usually defined by chemists as a “spirit,” or “spirituous fluid,” or “chemical compound,” obtained from fermented saccharine fluids or malted grain by distillation. The presence of yeast at 60°

* Being a lecture delivered to the non-commissioned officers and men of the Medical Staff Corps.

or 80° F. is necessary to split up the grain into alcohol and other products, principally carbonic acid gas, which escapes into the air leaving the alcohol behind in the water—such at all events is the main chemical reaction which takes place in the production of alcohol—and it is only further necessary to remember for our purpose that all spirituous liquors contain alcohol and water in various proportions. The best brandy, whisky, and rum contain respectively about 50 per cent. of alcohol and very nearly the same amount of water. The strong wines, *e.g.*, port, sherry, and Madeira contain from 16 to 25 per cent. of alcohol. The light wines, *e.g.*, champagne, hock, and Moselle contain from 6 to 16 per cent. of alcohol, while Irish stout and English ale contain not more than 5 per cent., and as to American and German beer they scarcely contain more than 2 per cent. It should also be remembered that all strong spirits contain ether, aromatic substances, and colouring matter in addition to alcohol, while wines and beers contain acids, salts, and sugar as well. The strength and composition of the best ales, wines, and spirits are very uniform, and if a man drinks a good article he may be pretty certain as to the quantity and amount of alcohol he is swallowing. But as to bad and immature stuffs God only knows what impurities and adulterations they may contain. One thing is certain—viz., that all new spirits, all young whisky, and bad cheap brandy (which is made from potatoes), contain large quantities of fusel oil. This fusel oil is technically called by chemists “amylic alcohol,” a most dangerous and fatal poison. I remember a coincidence which occurred when I was a student in Dublin, and which will serve to illustrate the poisonous nature of fusel oil. A great fire broke out in a large building or bonded store, where one of the great city distilleries had an immense quantity of fresh and immature whisky deposited. The fire occurred at night, about 10 o'clock, and attracted crowds of people from all parts of Dublin. The conflagration quickly attacked the whisky barrels, which burst, allowing the flaming whisky to run in torrents through the streets. Amongst the spectators were numerous thirsty souls who thought it a fine opportunity to have a “cheap drunk.” They drank the spirit off the streets, and the next morning the hospitals were crowded with dead and dying—all poisoned with the fusel oil of the fresh young whisky. I could point out many other cases of fusel oil poisoning that have come under my own notice. But it is unnecessary. What I want to impress is this—all new and immature spirit contains an excessive quantity of fusel oil, or amylic alcohol, and that this substance is a deadly poison, whereas the ripe, mature spirit contains little or none. Because by age and maturing the amylic alcohol is gradually converted or transformed into pure ethylic alcohol which is not a deadly poison. It is for this reason that legislators have proposed to increase the duty on fresh young spirits, so as to prohibit its sale as far as possible. It would certainly be a step in the right

direction; and I think it ought not to be a very difficult matter for the military authorities (so far as the army is concerned), to prohibit the use of any spirit under ten years old. Wines should be dealt with in a similar manner. We all know the value and properties of fine old crusted port; but we never get it at military hospitals; the contract system stops that.

Now a few words in regard to adulterations. These are not very numerous or dangerous. Certain berries, logwood, or burned sugar are added for the purpose of imparting colour to wines and spirits. Lime salts, lead, and alum have been found in wines; but they are not of frequent occurrence. Beer appears to be the principal beverage on which adulteration to any great extent is carried out. Sulphuric acid is added to give it the head and hard flavour of age; alum, salt, and iron are added for a somewhat similar purpose. But when the beer commences to turn and go bad lime and soda are the popular remedies employed to correct the sour taste. Strychnin has also been found in beer; it has been added for the purpose of increasing the bitter taste. Indian hemp is another dangerous adulteration which I am informed is added to an Indian spirit called "*Arrack*." The active principle of Indian hemp, "cannabin," produces peculiar, maddening delusions; and I have seen arrack drinking soldiers in India suffer from the self-same delusions, which I always attributed to the action of Indian hemp. The only other adulteration worth mentioning is water. This is largely added to spirits for a very obvious reason; and all canteen sergeants know the trick of adding it to beer. It is thus evident that more or less tampering is carried out with almost every kind of alcoholic drink. But this should not occur. And I am of opinion it would not occur if the authorities brought the chemist's art more frequently into requisition.

Having so far explained the properties of alcohol and its various amounts in the different kinds of drinks, together with their adulterations and impurities, we pass to the question as to its utility as a medicine and a "diet-drink." I may as well state at once that alcohol as a medicine is absolutely necessary in the treatment of certain diseases. The entire medical profession are unanimous on that point; consequently, I think, we need not further consider its medicinal uses here. With alcohol as a diet-drink we are at present more immediately concerned; but on this point the medical profession are not unanimous. With army surgeons, however, the discrepancy of opinion as to the dietetic uses of alcohol is less marked—in fact almost all military men are agreed that there is wonderful efficacy in a glass of good wine after dinner; and as to poor "Thomas Atkins" it may be taken for granted that he knows and appreciates the virtue of a sound, "honest, pint." In this as in most other matters we must be guided by facts and experience. They teach us that bad or impure drink does not agree with anybody; it wrecks the con-

stitutions of thousands and sends them to an early grave. Therefore, I think, that all immature liquors containing poisonous fusel oil should be ruthlessly condemned and scouted out of the market. To my mind it would be as wrong for a man to take a dose of bad liquor as it would be for him to swallow a narcotic poison—the only difference is that bad liquor kills slowly, the narcotic quickly. Bad whisky kills slowly but surely—I merely mention it to condemn it. Therefore, let it be borne in mind that when I speak of the dietetic uses of alcohol I am referring to the honest, ripe, and well matured article, free from fusel oil or other impurities. When a small quantity of alcohol is taken the vessels of the stomach absorb it quickly, and thus becoming mingled with the blood it is rapidly diffused through all the organs and tissues of the body. All the vital functions are stimulated; the heart's actions becomes more vigorous; the appetite is increased; the digestion is improved; the functions of the skin and kidneys are better performed; the nervous system is strengthened and invigorated; the brain and other organs derive benefit; and mental ideas flow clearer and fresher. These well marked and peculiar properties of alcohol are most useful at the turn of life when people commence to slide down the hill; and in declining years, as an aid and spur to all the vital functions, its efficacy is most important. By its aid the aged and languid powers are braced up, and stimulated life is prolonged and rendered more pleasant and agreeable. On the other hand it is a well recognised fact that children and young people do not require stimulants; it would be injurious to them, especially because, as a point of fact, youth and adolescence are the periods in life, above all others, for vigorous appetites and most perfect digestions. Therefore these functions require no aid or spur; and the best authorities are of opinion that healthy men and women under middle age do not require stimulants and are better off without them. We may, I think, therefore conclude that alcohol is injurious to children, unnecessary in healthy adult life, but beneficial from that age onwards.

We next come to consider the amount of alcohol it would be safe and judicious to take as a dietetic drink in the 24 hours. Our information on this point is derived mainly from observations and experience. The late Professor Parkes, at the Royal Victoria Hospital, Netley, made several experiments. In one he gave a healthy adult 12 ounces of brandy in divided doses—viz., 4 ounces every fourth hour. The first 4 ounces did not affect the man's capacity for work; the second 4 ounces lessened muscular force, while the third 4 ounces entirely destroyed the man's power of walking. In other words the 12 ounces of brandy taken in divided proportions at regular intervals produced intoxication. In this experiment it is important to bear in mind that the 4 ounce measure of the brandy employed contained $1\frac{1}{2}$ ounces of pure ethylic alcohol, and that this amount did not apparently interfere with the man's physical or

mental capacity in any way. Other experiments have been made by other observers, and they all go to prove that any quantity over 2 ounces of absolute alcohol will produce injurious effects. Therefore, roughly speaking, 1 to 2 ounces of pure alcohol, largely diluted, ought to be the daily limit in health.

We have seen that the best spirits do not contain more than 50 per cent. of pure alcohol. Consequently, as an average wineglassful equals about 4 ounces, and as a bottle holds about 28 ounces or 7 wineglassfuls, it is evident that a bottle of good whisky or brandy should be a full weekly allowance for a temperate man. But, unfortunately, we too often see instances in which a man will drink a whole weekly allowance in one night. I have shown that the strong wines average about 20 per cent. and the weak wines 10 per cent. of absolute alcohol. Therefore, it is evident that half a pint of the former or one pint of the latter should be a sufficient daily allowance. Yet, how often have I seen a man drink a quart, nay, a magnum of champagne after dinner. I have also pointed out that the best Irish stout and the best English ales do not contain above 5 per cent. of pure alcohol, consequently the daily ration of either of these beverages ought not to exceed one quart. But in the army how often do we hear of a man drinking two or three gallons. I have the notes of one man who would drink a small barrel in the day. He was a quarter-master sergeant and weighed over 20 stone.

It may be asked what is the best liquor to take as a diet-drink? An answer to that question turns mainly on the vital and physical condition of the individual; but to some extent also on the quality and purity of the beverage itself. At the present day it is a most difficult thing to get good brandy. The *British Medical Journal*, dated Sept. 26th, 1891, states, on the authority of Mr. Warburton, British Consul, Rochelle, that the supply of really genuine brandy—produced directly from the grape—is every year becoming smaller and smaller. A bottle of pure brandy, he states, cannot be purchased in France under 25 francs—that is to say the genuine stuff is worth a guinea a bottle. The spurious or false brandy is made from potato spirit; and, in this country it takes the place of the real article. It is cheap enough in one sense, but, being a slow poison, it is dear enough in the other; consequently, as brandies are most unreliable, I advise my friends to avoid them altogether. The stuff supplied as brandy to military hospitals is decidedly undesirable in the treatment of the sick, and, personally, I never prescribe it, if I can possibly avoid it. Neither can I say much for the general purity of the strong wines. That some are largely adulterated with foreign matter and extraneous spirit there can be no doubt, consequently we may reduce the long list of liquors to three only—these are whiskys, light wines, and ales. The Dublin whisky and Dublin stout are certainly pure and reliable articles, and I believe them to be the most wholesome alcoholic

drinks in the world. But of course they are only fit for gentlemen, so I would recommend the light wines for the ladies.

We now pass to what some may regard as the most interesting part of the subject—I mean the abuse of alcohol. Various causes have been assigned for the wreckless and intemperate abuse of alcohol. Some believe that it is a form of insanity. Hence it is termed *dipsomania*. Our American cousins appear to look on it in that light, and they even go so far as to assert that the dipsomaniac should be placed under restraint in the same manner as any other lunatic. In many of the States, it is said, they have entered on a vigorous crusade against intemperance. They will not accept fines for drunkenness. They simply run the habitual drunkard into jail, and they keep him there for any term they like, not exceeding one year. In habitual and aggravated cases this procedure seems, to me, humane and justifiable. Because we know that, too frequently, persons are allowed to drink themselves to death, unheeded and uncontrolled; consequently before their moral and social prospects are utterly ruined it would be the most charitable act in the world to lock them up. If you leave them at large they are certain to drink—drink, if they have the means—till they die or go mad. Dipsomaniacs as a rule die quickly. Any concomitant disease is sure to carry them away. But, apart from disease, how many die violent deaths, accidentally or otherwise. In my own experience I have known a great number. I will give one case out of many:—During the hot weather of 1884 I was stationed at Hyderabad, Sindh, and several cases of heat apoplexy occurred in that station that year. One poor fellow belonging to the regiment came sick one afternoon. He was flushed and nervous, and his temperature was 104. He said, “I have been a teetotaller all my life, and never knew the taste of liquor till yesterday, when my comrades induced me to have some drink. I drank ale to excess last night, and I was very ill from its effects. I had more to-day; because I was advised to take a ‘hair of the dog that bit me.’ But it made me worse, and I was obliged to come sick.” He was put to bed, but during the night he became comatose, got convulsions, and died. This case is interesting in more respects than one. It shows that a pernicious habit exists amongst soldiers of pressing their comrades to drink. Very few army surgeons there are who have not met with sad cases of *delirium tremens* and insanity, directly traceable to intemperance. Personally I do not mean to enter into particulars. Everybody hears of accidental deaths and suicides occurring every other week. They are usually very painful cases, at least such as we meet in the army, and I do not wish to refer to them further in this place. Suffice it to say, that intemperance is the direct cause of more sickness, more misconduct and misfortune than any other factor known to me. It is the fountain from which most of our social and physical ruin comes.

It helps largely to fill our gaols. It unhinges the minds of thousands and wrecks the constitutions of numbers untold.

There is another class of cases in which men do not drink constantly to excess, but who may do so occasionally. *Punch* gives causes and excuses for these occasional indiscretions. He says:—One man takes an extra glass because a friend called to see him, another because his friend *did not call*; one man gets into the way of taking an extra glass because he *got married*, another because his *wife died*; some drink because they are going away, others because they *come back*; some because they are *hot*, others because they are *cold*; one because he has a *rising*, another because he has a *sinking*; and the Irishman, it is said, drinks for no reason at all. However, apart from the comic aspect of the question, I think that the cause of an occasional “bend,” in an otherwise temperate man, is either joy or sadness. The troubled conscience finds relief in whisky. It comes to the gambler’s relief on occasions of great excitement. “Throw in a bottle,” says Sheridan, “and I *never lose*, or at least I never feel *my losses*, which amounts to the same thing.” And Shakespeare says—“Give me a bout of wine; in that I bury all unkindness.” Therefore, it seems that the cause is always some mental disturbance. But whatever the cause, the thing to fear and avoid is the habit. One single debauch, if carried to excess, may terminate fatally; and the man who indulges in occasional debauches may, and very frequently does, turn out a habitual drunkard. What are the consequences? Premature decay and an early death. Examine the vital statistics and you will find that if a man becomes intemperate at the age of 20, he will never live to be 35; but should he lead a fairly temperate life, the chances of his living to 65 or more are very great. The intemperate beer drinker has a slightly better chance than the spirit drinker. The difference is not of very material importance, so let no man be deceived. Poisonous doses of alcohol, in whatever shape or form, will certainly kill sooner or later. It may be asked in what manner are the destructive actions of alcohol induced. The answer is by causing degeneration of all the tissues of the body, and, hence, inducing a gradual break up of the entire system. The heart degenerates and becomes fatty; the liver degenerates and becomes disorganised; the intellect fails; the constitutional vigour is lost; and thus insidiously a gradual decay puts an end to the unhappy scene. In proof of these statements I will for a moment ask your attention to the statistics of two societies, both well known and often referred to in discussions of this kind—I mean the Rechabites and the Ancient Order of Foresters. The former is a society of total abstainers, while the latter, as I understand, does not contain any teetotallers. Compare the mortality of these societies and you will find that at 20 years of age 1·7 per 1,000 more Foresters die than Rechabites; at 30 years, 2·95; at 40 years, 5·62; at 50 years, 6·65; and at 60 years, 8·51. There is thus no

difficulty in showing that the total abstainer is even a better life than the moderate drinker—that is, if we can regard the Foresters as moderate drinkers. The statement may be taken *cum grano salis*, for the few Foresters I have known were decidedly heavy drinkers.

There is just one more point to which I would wish to direct your attention. It is this—the children of intemperate parents are always mentally and physically weak. Every medical man knows that consumption is a disease which produces havoc amongst the families of drunken parents. Insanity and epilepsy are others. It has been estimated that 20 per cent. of all cases of lunacy occur amongst the habitual drunkards, and about 40 per cent. are the descendants of habitual drunkards. Consequently, it is evident that the abuse of alcohol affects the future as well as the present generation.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS, ROME, 1894.

MESSRS. THOS. COOK & SON of Ludgate Circus, London, E.C., have been appointed the official agents for travelling arrangements for the Congress, and they have made arrangements for special cheap return tickets to Rome for members of the Medical profession and friends attending the meetings. At the request of the Central Committee they have also arranged to reserve hotel accommodation in Rome for delegates and friends at rates varying from 10s. to 20s. per day, or higher if superior apartments are required. The fact of the Congress being held immediately after Easter renders it difficult to guarantee accommodation at hotels, and Messrs. Thos. Cook & Son will not guarantee to provide the same unless they receive application on or before February 15th, stating the number of days for which accommodation will be required, the number of rooms and beds desired, and the approximate rate per day that will be paid. They will, however, do their best to meet the wishes of those delegates who cannot give their decision prior to that date. They have also issued a special programme of a select conducted party to leave London on Tuesday, March 27th, travelling *viâ* Dover, Calais, Paris, and Turin to Rome, spending eight days in that city, and returning by the same route, and spending Sunday, April 8th, in Genoa, at a specially low and inclusive rate to delegates of £16 5s., providing for all travelling tickets, meals *en route*, and for the eight days' stay in Rome. In addition to the above arrangements a programme has been drawn up of conducted tours for visiting Sicily, Naples, Vesuvius, Pompeii, Capri, Sorrento, &c., &c., and for three days' excursions in Rome under the leadership of Dr. Russell Forbes, the Archæological and Historical Lecturer on Roman Antiquities.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, December 30, 1893.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Dec. 9	Dec. 16	Dec. 23	Dec. 30		Dec. 9	Dec. 16	Dec. 23	Dec. 30
Armagh -	21·0	21·0	56·1	28·0	Limerick -	25·3	22·5	19·6	30·9
Belfast -	23·6	29·3	31·3	33·4	Lisburn -	25·7	29·8	21·3	8·5
Cork -	35·3	45·0	42·2	31·1	Londonderry	28·3	29·8	28·3	28·3
Drogheda	52·7	39·5	52·7	48·4	Lurgan -	13·7	9·1	27·4	18·2
Dublin -	29·5	27·4	30·1	35·6	Newry -	32·2	16·1	20·1	12·1
Dundalk -	12·6	12·6	12·6	16·3	Sligo -	35·5	10·2	15·2	10·2
Galway -	45·3	11·3	22·7	34·0	Waterford -	35·0	15·0	40·0	35·0
Kilkenny	33·0	28·6	14·2	42·5	Wexford -	36·1	58·7	40·6	90·3

In the week ending Saturday, December 9, 1893, the mortality in thirty-three large English towns, including London (in which the rate was 31·0), was equal to an average annual death-rate of 28·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·0 per 1,000. In Glasgow the rate was 27·4, and in Edinburgh it was 28·6.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 28·4 per 1,000 of the population, according to the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·1 per 1,000, the rates varying from 0·0 in Waterford, Galway, Dundalk, Wexford, and Kilkenny, to 8·5 in Lisburn—the 6 deaths from all causes registered in that district com-

prising 1 from scarlatina. Among the 120 deaths from all causes registered in Belfast are 2 from measles, 1 from scarlatina, 4 from whooping-cough, 2 from diphtheria, 6 from enteric fever, and 4 from diarrhœa. The 18 deaths in Limerick comprise 2 from measles. The Registrar of Waterford No. 1 District reports that 2 of the 11 deaths registered in the district were attributed to influenza. The Registrar of St. Mary's District, Drogheda, remarks:—"Epidemic influenza and whooping-cough are both prevalent in this district;" and the Registrar of Armagh District remarks—"A widespread outbreak of influenza exists in Armagh District; no fatal cases as yet."

In the Dublin Registration District the registered births amounted to 180—104 boys and 76 girls; and the registered deaths to 205—101 males and 104 females.

The deaths, which are 1 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 30·6 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 29·5 per 1,000. During the forty-nine weeks of the year 1893, ending with Saturday, December 9, the death-rate averaged 26·7, and was 0·8 under the mean rate in the corresponding period of the ten years 1883—1892.

Thirty-two deaths from zymotic diseases were registered, being 7 over the average for the corresponding week of the last ten years, and 14 over the number for the week ended December 2. They comprise 5 from measles, 1 from scarlet fever (scarlatina), 4 from influenza and its complications, 6 from whooping-cough, 9 from enteric fever, 2 from diarrhœa, and 2 from erysipelas.

The number of cases of enteric fever admitted to hospital was 17, being 1 under the admissions for the preceding week: 18 enteric fever patients were discharged, 1 died, and 116 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, December 2.

Thirty cases of scarlatina were admitted to hospital, against 16 admissions in the preceding week and 11 in the week ended November 25. Fourteen patients were discharged, 1 died, and 105 remained under treatment on Saturday, being 15 over the number in hospital at the close of the preceding week.

The hospital admissions for the week included 14 cases of measles (being 4 in excess of the admissions for the preceding week, but 6 under the number for the week ended November 25), and 2 cases of typhus: 38 cases of measles and 6 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 43 for the week ended November 25 to 51 for the following week, further rose to 60, or 11 over the average for the corresponding week of

the last ten years. The 60 deaths comprise 40 from bronchitis, 11 from pneumonia or inflammation of the lungs, and 3 from pleurisy.

In the week ending Saturday, December 16, the mortality in thirty-three large English towns, including London (in which the rate was 29·1), was equal to an average annual death-rate of 26·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·0 per 1,000. In Glasgow the rate was 23·4, and in Edinburgh it was 24·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 28·6 per 1,000 of the population, according to the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·3 in Lisburn—the 7 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 149 deaths from all causes registered in Belfast are 6 from measles, 2 from scarlatina, 7 from whooping-cough, 1 from diphtheria, 3 from enteric fever, and 2 from diarrhœa. One death from influenza was registered in Kilkenny No. 1 District. The Registrar of Wexford District reports:—"Influenza is prevalent in the district;" and the Registrar of Armagh District remarks:—"Three deaths occurred in the district from influenza this week."

In the Dublin Registration District the registered births amounted to 157—85 boys and 72 girls; and the registered deaths to 189—80 males and 109 females.

The deaths, which are 18 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·2 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 27·4 per 1,000. During the fifty weeks of the year 1893 the death-rate averaged 26·7, and was 0·9 under the mean rate in the corresponding period of the ten years 1883-1892.

The number of deaths from zymotic diseases registered was 23, being 9 under the number for the preceding week and 1 under the average for the 50th week of the last ten years. The 23 deaths comprise 2 from measles, 1 from scarlet fever (scarlatina), 5 from influenza and its complications, 3 from whooping-cough, 6 from enteric fever, 1 from diarrhœa, 1 from dysentery, and 1 from erysipelas.

Only 11 cases of enteric fever were admitted to hospital, being a decline of 6 as compared with the admissions for the preceding week and 7 under the number for the week ended December 2. Twenty-six enteric fever patients were discharged, 2 died, and 99 remained under treatment on Saturday, being 17 under the number in hospital at the close of the preceding week.

The number of cases of scarlatina admitted to hospital was 20, being 10 under the admissions for the preceding week: 23 patients were discharged, 1 patient died, and 101 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, December 9.

The hospital admissions for the week included, also, 20 cases of measles and 1 case of typhus, the former number being 6 in excess of the number of cases of measles admitted during the preceding week and 10 over the number for the week ended December 2. Forty-two cases of measles and 6 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system amounted to 62, being 2 over the number for the preceding week, and 9 in excess of the average for the 50th week of the last ten years. They comprise 39 from bronchitis, 17 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, December 23, the mortality in thirty-three large English towns, including London (in which the rate was 26·3), was equal to an average annual death-rate of 24·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·3 per 1,000. In Glasgow the rate was 22·1, and in Edinburgh it was 20·4.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 30·8 per 1,000 of the population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·0 per 1,000, the rates varying from 0·0 in nine of the districts to 14·0 in Armagh—the 8 deaths from all causes registered in that district comprising 1 from measles and 1 from whooping-cough. Among the 159 deaths from all causes registered in Belfast are 7 from measles, 2 from scarlatina, 6 from whooping-cough, 3 from diphtheria, 4 from enteric fever, and 2 from diarrhoea. The 18 deaths in Londonderry comprise 2 from diphtheria. The Registrar of Cork No. 5 District, remarks:—"Measles is prevalent; influenza is fast diminishing"; and the Registrar of Waterford No. 1 District reports:—"Two deaths attributed to influenza."

In the Dublin Registration District the registered births amounted to 152—80 boys and 72 girls; and the registered deaths to 204—88 males and 116 females.

The deaths, which are 2 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 30·4 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 30·1 per 1,000. During the fifty-one weeks of the year 1893 ending with Saturday, December 23, the death-rate averaged

period of 26·8, and was 0·9 under the mean rate in the corresponding the ten years 1883–1892.

Forty deaths from zymotic diseases were registered, being 17 over the number for the preceding week and 18 over the average for the 51st week of the last ten years. They comprise 1 from measles, 1 from typhus, 12 from influenza and its complications, 6 from whooping-cough, 1 from ill-defined fever, 8 from enteric fever, 3 from diarrhœa, and 4 from erysipelas.

There has been a further decline in the number of cases of enteric fever admitted to hospital. The admissions during the week ended November 25, amounted to 25, in the following week they fell to 18; in the week ended December 9, the number was 17; in the following week it fell to 11; and during the week now under review there were but 8 cases admitted. Twenty-nine enteric fever patients were discharged, 3 died, and 75 remained under treatment on Saturday, being 24 under the number in hospital at the close of the preceding week.

The number of cases of scarlatina admitted to hospital was 13, being 7 under the admissions for the preceding week and 17 under the number for the week ended December 9. Twelve patients were discharged, and 102 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, December 16.

The hospital admissions for the week included, also, 13 cases of measles (being 7 under the number for the preceding week), and 2 of typhus. Forty cases of measles and 7 of typhus remained under treatment in on Saturday.

The number of deaths from diseases of the respiratory system registered was 54, being 11 in excess of the average for the corresponding week of the last ten years, but 8 under the number for the week ended December 16. The 64 deaths consisted of 35 from bronchitis, 18 from pneumonia or inflammation of the lungs, and 1 from croup.

In the week ending Saturday, December 30, the mortality in thirty-three large English towns, including London (in which the rate was 23·3), was equal to an average annual death-rate of 22·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·8 per 1,000. In Glasgow the rate was 20·3, and in Edinburgh it was 19·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 33·5 per 1,000 of the population, according to the Census of 1891.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 3·8 per 1,000, the rates varying from 0·0 in eight of the districts to 17·6 in Drogheda—the 11 deaths from all causes registered in that district comprising 4 from whooping-

cough. Among the 170 deaths from all causes registered in Belfast are 13 from measles, 4 from scarlatina, 9 from whooping-cough, 3 from enteric fever, and 4 from diarrhœa. The 22 deaths in Limerick comprise 2 from whooping-cough, 1 from simple continued fever and 2 from enteric fever. The Registrar of St. Mary's District, Drogheda, reports:—"Influenza is on the decrease but still present. Whooping-cough and measles prevalent." The Registrar of Kilkenny No. 1 District remarks:—"Two deaths from influenza registered during the week."

In the Dublin Registration District the registered births amounted to 188—86 boys and 102 girls; and the registered deaths to 247—123 males and 124 females.

The deaths, which are 30 over the average number for the corresponding week of the ten years, 1883-1892, represent an annual rate of mortality of 36·8 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 35·6 per 1,000. During the fifty-two weeks ending with Saturday, December 30, 1893, the death-rate averaged 27·0, and was 0·7 under the mean annual rate for the ten years 1883-1892.

Forty deaths from zymotic diseases were registered, being equal to the number for the preceding week but 17 over the average for the 52nd week of the ten years 1883-1892. They comprise 1 from varicella (chicken pox), 3 from measles, 2 from scarlet fever (scarlatina), 12 from influenza and its complications, 6 from whooping-cough, 6 from enteric fever, 2 from diarrhœa, 1 from dysentery, and 2 from erysipelas.

Fourteen cases of enteric fever were admitted to hospital, being 6 over the admissions for the preceding week: 13 enteric fever patients were discharged, and 76 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, December 23.

The number of cases of scarlatina admitted to hospital was 9, being a decline of 4 as compared with the admissions for the preceding week, and 11 under the number for the week ended December 16. Seventeen patients were discharged, one died, and 93 remained under treatment on Saturday, being 9 under the number in hospital at the close of the preceding week.

The hospital admissions for the week included, also, 28 cases of measles (being 15 over the number for the preceding week), and 2 of typhus. Fifty-seven cases of the former and 7 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system amounted to 56, a number equal to the average for the corresponding week of the ten years, 1883-1892, and 2 over the number for the week ended December 23. They comprise 28 from bronchitis, 20 from pneumonia or inflammation of the lungs, 2 from croup, and 1 from pleurisy.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. $53^{\circ} 20' N.$,
Long. $6^{\circ} 15' W.$, for the Month of December, 1893.*

Mean Height of Barometer,	-	-	-	29.868 inches.
Maximal Height of Barometer (on 30th, at 9 a.m.),	-	-	-	30.706 „
Minimal Height of Barometer (on 10th, at noon),	-	-	-	28.530 „
Mean Dry-bulb Temperature,	-	-	-	42.8°.
Mean Wet-bulb Temperature,	-	-	-	40.8°.
Mean Dew-point Temperature,	-	-	-	38.2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	.235 inch.
Mean Humidity,	-	-	-	84.6 per cent.
Highest Temperature in Shade (on 15th),	-	-	-	56.7°.
Lowest Temperature in Shade (on 2nd),	-	-	-	28.3°.
Lowest Temperature on Grass (Radiation) (on 2nd)	-	-	-	23.0°.
Mean Amount of Cloud,	-	-	-	57.3 per cent.
Rainfall (on 19 days),	-	-	-	2.482 inches.
Greatest Daily Rainfall (on 24th),	-	-	-	.499 inch.
General Directions of Wind,	-	-	-	S.W., W.

Remarks.

A generally open, rainy, squally month. The prevailing trend of the atmospheric depressions was from S.W. to N.E. along the western shores of the British Isles and of Scandinavia. At the close of the month an anticyclone spread westwards from the Continent to the British Isles, and was accompanied by an abrupt fall of temperature, much cloud and fog. The rainfall of the whole month (2.482 inches) was above the average. Several serious gales were felt, but calms with fog prevailed during the closing days of the month.

In Dublin the arithmetical mean temperature (43.5°) was decidedly above the average (41.3°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 42.8° . In the twenty-eight years ending with 1892, December was coldest in 1878 (M. T. = 32.8°), and in 1874 (M. T. = 36.8°), and warmest in 1865 (M. T. = 46.2°). In 1886, the M. T. was as low as 37.9° ; in the year 1879 (the "cold year"), it was also 37.9° . In 1887, the M. T. was 39.9° ; in 1888, 43.6° ; in 1889, 43.8° ; in 1890, 39.2° ; in 1891, 43.0° ; and in 1892, 39.6° .

The mean height of the barometer was 29.868 inches, or 0.013 inch below the corrected average value for December—namely, 29.875 inches. The mercury rose to 30.706 inches at 9 a.m. of the 30th, and fell to 28.530 inches at noon of the 10th. The observed range of atmospheric pressure was, therefore, no less than 2.176 inches—that is, a little less than two inches and two-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was $42\cdot8^{\circ}$, or only $0\cdot5^{\circ}$ below the value for November, and $6\cdot0^{\circ}$ below that for October, 1893. Using the formula, *Mean Temp.* = *Min.* + (*max.* - *min.* \times $\cdot 52$), the value was $43\cdot7^{\circ}$, or $2\cdot2^{\circ}$ above the average mean temperature for December, calculated in the same way, in the twenty-five years, 1865-89, inclusive ($41\cdot5^{\circ}$). The arithmetical mean of the maximal and minimal readings was $43\cdot5^{\circ}$, compared with a twenty-five years' average of $41\cdot3^{\circ}$. On the 15th, the thermometer in the screen rose to $56\cdot7^{\circ}$ —wind, S.W.; on the 2nd, the temperature fell to $28\cdot3^{\circ}$ —wind, W.N.W. The minimum on the grass was $23\cdot0^{\circ}$, also on the 2nd. There were only 3 days of frost in the screen and 16 days of frost on the grass.

The rainfall was 2·482 inches, distributed over as many as 19 days. The average rainfall for December in the twenty-five years, 1865-89, was 2·404 inches, and the average number of rainy days was 16·9. The rainfall, therefore, and the rainy days were above the average. In 1876 the rainfall in December was very large—7·566 inches on 22 days. In 1872, 4·932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year), 4·749 inches fell on as many as 27 days. On the other hand, in 1867, only ·771 inch was measured on 13 days; and in 1871 the December rainfall was only ·797 inch on 15 days. In 1885, only ·742 inch of rain was measured on but 10 days; but in 1886 the rainfall was 3·348 inches, distributed over as many as 21 days. In 1887 (the "dry year"), the rainfall was 1·223 inches on 19 days; in 1888, 2·911 inches on 17 days; in 1889, 1·554 inches on 15 days; in 1890, 1·856 inches on 11 days; in 1891, 3·299 inches on 21 days; and in 1892, only ·795 inch on 10 days.

Lunar halos appeared on the 14th and 18th. High winds were noted on 17 days, and attained the force of a gale on 5 occasions—the 6th, 8th, 10th, 15th, and the 19th. The atmosphere was more or less foggy in Dublin on the 2nd, 17th, 27th, 28th, 29th, 30th, and 31st. Neither snow nor sleet fell in Dublin, although the mountains were covered with snow on the 18th and 20th. Hail fell on the 13th. Thunder and lightning occurred on the 8th.

Cold, bright weather prevailed during the first two days of the month, especially in Ireland, where an anticyclone of considerable intensity formed on Friday, the 1st, in the wake of two depressions which had passed south-eastwards across Western Europe immediately before. The frost in Scotland was very sharp on the morning of the 1st, and the wave of cold travelled southwards, so that at 8 a.m. of the 2nd the thermometer read only 17° at Loughborough.

As regards the week ended Saturday, the 9th, at first the weather was mild and damp in Ireland, rainy in Scotland, very frosty in the S. and

S.E. of England. Thus, at 8 a.m. of Sunday the thermometer registered 49° at Belmullet, 48° at Stornoway, in the Hebrides, where 1.2 inches of rain had fallen in the previous 24 hours; but only 21 in London. An anticyclone, in which the barometer exceeded 30.5 inches, lay over the S.W. of Ireland; but a cyclonic system was skirting the north coast of Scotland. On Tuesday the barometer gave way quickly as a series of large and deep atmospheric depressions began to encroach on the shores of the North-West of Europe from the Atlantic. These, as is usual, brought unsettled weather, high but unsteady temperatures, gales and rains, to the greater part of the British Isles. On Thursday night a depression of exceptional magnitude rapidly passed northeastwards outside the north-west and north coasts of Ireland. The barometer fell to 28.27 inches at Malin Head on Friday morning, and to 27.97 inches at Stornoway at 4 p.m. of the same day. During the preceding night strong S.W. and W.S.W. gales, and thunder and hail showers prevailed at many stations, and these were renewed in the course of Friday afternoon. At Navan, Co. Meath, lumps of ice fell in a thunder-shower towards evening. At night lightning was seen on the N.W. horizon from Dublin. Saturday was a bright, cold day, and the week closed with a promise of frost, which, however, was not fulfilled. In Dublin the mean height of the barometer was 29.817 inches. Pressure varied from 30.393 inches at 9 a.m. of Sunday (wind, W.) to 28.937 inches at 7.30 a.m. of Friday (wind, W.S.W.). The corrected mean temperature was 44.9° . The mean dry bulb temperature at 9 a.m. and 9 p.m. was 44.1° . On Sunday the screened thermometers sank to 33.7° , on Wednesday they rose to 53.1° . The rainfall amounted to .352 inch on three days. The maximal fall in 24 hours was .179 inch on Thursday. The prevalent winds were W.N.W., W., and W.S.W.

Atmospheric pressure and temperature were in a most unstable condition throughout the N. and W. of Europe and over the adjoining parts of the North Atlantic during the week ended Saturday, the 16th. Consequently, the weather was extremely unsettled, strong southerly and south-westerly gales prevailed, and heavy rainfalls occurred on all exposed coasts. On Sunday a very deep depression advanced northeastwards over Ireland. Strong S.E. to S.W. gales blew and heavy rain fell on the S. and E. coasts and over the Irish Sea during the forenoon. In Dublin the barometer fell to 28.530 inches about midday. During the next two days a number of subsidiary depressions crossed England, keeping the weather unsettled and showery. A thunderstorm occurred at Valentia Island on Monday night, and lightning was seen over the North Channel at the same time. Early on Wednesday morning a new and very deep depression was found over Central Ireland, where the barometer scarcely exceeded 28.5 inches (28.52 inches at Parsonstown, King's Co.). As pressure was at this time everywhere low, no serious gales followed, but

rain fell abundantly in nearly all parts of the United Kingdom. A singularly rapid recovery of atmospheric pressure ensued, so that the Thursday morning readings exceeded those of Wednesday morning by 1·31 inches at Parsonstown, 1·29 inches in Dublin and at Valentia, and 1·22 inches at Roche's Point, Co. Cork. An anticyclone now formed over France, where temperature fell fast; but strong S.W. winds and gales, and high readings of the thermometer were reported from Ireland, Scotland, and many parts of England on both Friday and Saturday. In Dublin the mean atmospheric pressure was 29·537 inches, the barometer ranging between 28·568 inches at 9 a.m. of Wednesday (wind, S.S.W.), and 30·218 inches at 1 a.m. of Saturday (wind S.W.). The corrected mean temperature was 43·5°; the mean dry bulb readings at 9 a.m. and 9 p.m. were 43·1°. On Friday the screened thermometers rose to 56·7°, having fallen to 32·8° the previous day. The rainfall was ·862 inch on five days, ·460 inch being measured on Tuesday and ·351 inch on Sunday. The prevalent wind was S.W. Gales occurred from S.E. on Sunday, and from S.W. on Friday.

Throughout the week ended Saturday, the 23rd, atmospheric pressure remained in a very disturbed condition, rain fell frequently—in Ireland and Scotland in particular—and blustering S.W. and W. winds or gales were very prevalent, especially from Tuesday to Friday inclusive. The barometer stood highest for the most part over the Peninsula and Central Europe, lowest off our extreme W. and N.W. coasts. Hence, the winds were strong from S.W. and W. Sunday was fine, bright, and mild, but rain fell at night. Monday was colder, and snow lay on the higher ranges of the Dublin Mountains. The barometer fell fast during the ensuing night, and the wind rose to a gale from S. At 8 a.m. of Tuesday the barometer was down to 28·80 inches at Belmullet, in Mayo. In the course of Tuesday night a still deeper secondary depression advanced to St. George's Channel from the S. W., the barometer reading only 28·60 inches at Pembroke and 28·64 inches at Roche's Point at 8 a.m. of Wednesday. This low pressure system brought with it gales and heavy rains—a strong S.W. gale being felt in the S. of England and a violent N.W. gale over the western parts of the English Channel. Hail fell in the W. and N. of Ireland and thunder occurred at Ardrossan. Thursday was a fine, bright day, but on Friday forenoon another rainfall occurred in Ireland. This was followed by a beautiful day, with which the week closed. In Dublin the mean height of the barometer was only 29·562 inches, pressure ranging between 30·166 inches at 9 a.m. of Sunday (wind, S. by W.) and 28·784 inches at 9 a.m. of Wednesday (wind, N.N.E.). The corrected mean temperature was 44·0°. The mean dry bulb readings at 9 a.m. and 9 p.m. were 43·0°. On Thursday the thermometers sank to 34·9°, on Friday they rose to 52·8°, in the screen. The prevailing direction of the wind was S.W. Rain fell on

each day of the week to the total amount of $\cdot 683$ inch, $\cdot 256$ inch being measured on Tuesday.

The week ended Saturday, the 30th, witnessed the gradual substitution of anticyclonic for cyclonic conditions over the extreme West of Europe, and the consequent dying out of the strong, squally S.W. winds which had so long been blowing. It also saw the establishment of calms and fogs, as well as a general and decided fall of temperature towards the close of the period. At the beginning, depressions skirted the west coasts of Ireland and Scotland, and rain fell heavily in these countries and in smaller quantities over England. On Sunday a warm, bright morning was followed by a downpour of rain in Dublin, where the measurement was just half an inch. Christmas Day (Monday) was finer and cooler, but sharp showers fell shortly after midday in this city. A succession of mild, dull, damp days followed, and in London dense dark fogs prevailed on Wednesday and the next two days. By Saturday, however, an anticyclone of great size and intensity had been fully established over central and western Europe and the weather brightened and became much colder. At 8 a.m. of Friday the barometer stood at $30\cdot 79$ inches over the North of Germany, and the thermometer was as low as 2° F. at Munich, having fallen there 29° in the previous twenty-four hours. On Friday evening the barometer rose to $30\cdot 86$ inches in Berlin. Sharp frost held in Germany, France, and the centre of England on Saturday. In Dublin the mean height of the barometer was $30\cdot 319$ inches, pressure ranging between $29\cdot 641$ inches at 9 p.m. of Sunday (wind, W.S.W.) and $30\cdot 706$ inches at 9 a.m. of Saturday (wind, S.). The corrected mean temperature was $46\cdot 4^{\circ}$. The mean dry bulb readings at 9 a.m. and 9 p.m. were $45\cdot 4^{\circ}$. On Sunday the maximum in the shade was $55\cdot 8^{\circ}$; on Saturday the minimum was $35\cdot 9^{\circ}$. Rain fell on four days to the total amount of $\cdot 585$ inch; $\cdot 499$ inch being measured on Sunday. The prevailing winds were southwesterly.

Sunday, the 31st, was a raw, damp, very cold day in Dublin. In the morning a dense vapour-fog prevailed, and as the thermometer stood below freezing point thick rime was deposited on trees and shrubs. On this day the distribution of both atmospheric pressure and temperature over Western Europe was peculiar. An anticyclone had its centre over the southern half of Ireland, the barometer reading $30\cdot 63$ inches at 8 a.m. at Parsonstown. A deep depression was at the same moment travelling eastwards across the north of Russia, the barometer being as low as $28\cdot 60$ inches at Archangel. The thermometer at the hour named read 46° at Malin Head, but only 31° at Valentia Island in Kerry and 27° at Parsonstown. Dublin was 11° colder than Holyhead. At Nairn, in the N.E. of Scotland, the temperature was 49° , in Paris it was 18° , or 31° lower. On the Christiania Fjord it was 42° , at Biarritz 28° , and at Munich 1° . Scilly was 20° warmer than London (44° compared with 24°), and Stockholm was 9° warmer than Nice (37° against 28°).

The rainfall in Dublin during the year ending December 31st amounted to only 20·493 inches on 174 days, compared with 25·644 inches on 196 days in 1892, 27·820 inches on 184 days in 1891, 27·562 inches on 200 days in 1890, 27·272 inches on 193 days in 1889, 28·679 inches on 190 days in 1888, 16·601 inches on 160 days in 1887, and a 25 years' average of 27·696 inches on 194·3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in December, 1893, was 2·940 inches, distributed over 20 days. Of this quantity ·540 inch fell on the 12th, and ·420 inch on the 20th.

From January 1st to December 31st, 1893, rain fell at Knockdolian, Greystones, on 170 days, and to the total amount of 22·526 inches.

At Cloneevin, Killiney, Co. Dublin, 2·04 inches of rain fell during December on 20 days. The maximal fall in 24 hours being ·29 inch on the 19th. The average rainfall for December at this station is 2·117 inches on 15 days.

From January 1st to December 31st, 1893, rain fell at Cloneevin, Killiney, on 176 days to the total amount of 18·05 inches.

RAINFALL IN 1893,

At 40 Fitzwilliam-square, West, Dublin.

Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground 3 ft. 2 in. ; above sea level, 50 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which ·01 or more fell
	Inches	Depth	Date	
January, - - -	2·239	·513	31st	19
February, - - -	2·669	·480	9th	22
March - - -	·288	·101	2nd	8
April, - - -	1·046	·370	17th	7
May, - - -	1·666	·720	20th	10
June, - - -	1·716	·492	26th	12
July, - - -	2·042	·871	12th	14
August, - - -	2·713	·516	18th	16
September, - - -	·729	·174	6th	14
October, - - -	1·033	·322	14th	16
November, - - -	1·870	·821	16th	17
December, - - -	2·482	·499	24th	19
Total, - - -	20·493	—	—	174

RAINFALL AT KILLINEY, CO. DUBLIN, IN 1893.

Mr. Robert O'Brien Furlong, M.A., Univ. Dubl., reports that rain fell in 1893, at his residence, Cloneevin, Killiney, Co. Dublin, on 176 days to the total amount of 18·05 inches. The average figures for eight years were 25·518 inches on 174·35 days. In 1887—the Jubilee year—the

rainfall at this station was only 17·64 inches on but 148 days. In that year 1·05 inches fell on one day. The maximal fall on any one day in 1893 was only ·63 inch on April 16. Periods of absolute drought—14 days without rain—occurred from April 1 to 14 and from June 7 to 21. From March 19 to April 14 only ·02 inch fell.

The rainfall was 7·203 inches in defect of the average annual measurement of the twenty-five years, 1865–89, inclusive—viz., 27·696 inches.

It will be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell, in 1884, when the measurement was 20·467 inches, and in 1893 with its rainfall of 20·493 inches. In seven of the twenty-five years in question the rainfall was less than 26 inches, and in 1885 it was 26·614 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1886—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1893, there were 174 rainy days, or days upon which not less than ·01 inch of rain (one hundredth of an inch) was measured. This was considerably in defect of the average number of rainy days, which was 194·3 in the twenty-five years, 1865–89, inclusive. In 1868—the warm dry year of recent times—as well as in 1887, the rainy days were only 160, and in 1870 they were only 145. In 1868, however, the rainfall amounted to 24·935 inches, or more than 8 inches above the measurement in 1887, and even in 1870, 20·859 inches were recorded.

The rainfall in 24 hours from 9 a.m. to 9 a.m. exceeded one inch on two occasions in 1892—viz., May 28th (2·056 inches) and August 16th (1·310 inches). On no occasion in 1893 did one inch of rain fall on a given day in Dublin, the maximal daily measurements were ·871 inch on July 12th, and ·821 inch on November 16th.

Included in the 174 rainy days in 1893 are 17 on which snow or sleet fell, and 21 on which there was hail. In January hail was observed on 4 days, in February on 6 days, in March on 2 days, in April, August and October on 1 day, in November on 5 days, and on one day in December. Snow or sleet fell on 4 days in January, on 7 days in February, on 2 days in March, on 4 days in November, and on not one occasion in December. Thunder occurred on ten occasions during the year—three times in May twice in July and August, and once in June, September, and December. Lightning was also seen on four occasions in October, twice in August and September, and once in February and December.

The rainfall was distributed as follows:—5·196 inches fell on 49 days in the first quarter, 4·428 inches on 29 days in the second, 5·484 inches

on 44 days in the third, and 5·385 inches on 52 days in the fourth and last quarter.

The rainfall in the first six months was 9·624 inches on 78 days—that is, not one half of the year's record. In February the rainfall was 2·669 inches on 22 days, in August 2·713 inches fell on 16 days, and in December 2·482 inches on 19 days.

Of the 5·385 inches which fell in the fourth quarter of the year, only 1·033 inches were measured in October on 16 days, and 1·870 inches in November on 17 days. In December the rainfall was both considerable and frequent.

Aurora borealis was observed on three occasions—namely, on February 16th, September 1st, and October 29th. More or less fog prevailed on 38 occasions—4 in January, 3 in February, 8 in March, 2 in April, 3 in August, September, and October, respectively; 5 in November, and 7 in December. The March fogs were very dry. High winds were noted on 130 days—18 in January, 11 in February and March, respectively; 4 in April and May, respectively; 7 in June, 9 in July, 10 in August, 14 in September, 10 in October, 15 in November, and 17 in December. The high winds amounted to gales (force 7 or upwards according to the Beaufort scale) on 24 occasions—4 in January and February, respectively; 1 in March and June, respectively; 3 in August, 2 in October, 4 in November, and 5 in December.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1893.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds
January	° 54·9	30th	° 20·2	3rd	° 44·7	° 36·9	Ins.	19	Ins.	Ins.	21st	Ins.	28th	W., N.W.
February	° 56·4	18th	° 26·0	25th	° 47·5	° 37·8	2·669	22	29·604	30·218	4th	28·790	14th	W., S.W., S.
March	° 64·8	29th	° 34·0	17th	° 54·6	° 41·5	·288	8	30·085	30·411	19th	29·267	1st	W., E.N.E., E.S.E.
April	° 66·8	22nd	° 36·2	14th	° 58·2	° 44·6	1·046	7	30·171	30·575	8th	29·793	19th	N.W., E.N.E.
May	° 70·2	11th	° 42·8	31st	° 62·7	° 50·6	1·666	10	30·038	30·455	10th	29·407	19th	E., S.E., W.N.W.
June	° 74·7	19th	° 46·9	28rd	° 66·3	° 53·4	1·716	12	30·002	30·898	7th	29·320	27th	E., N.W., S.E.
July	° 74·5	23rd	° 50·0	22nd	° 68·1	° 55·0	2·042	14	29·896	30·234	27th	29·429	19th	N.W., W., N.E.
August	° 79·8	15th	° 47·9	26th	° 69·6	° 56·4	2·713	16	29·965	30·396	29th	29·290	21st	S.W., N.W.
September	° 72·0	5th	° 38·2	21st	° 62·6	° 49·1	·729	14	29·848	30·345	12th	29·052	29th	N.W., W.
October	° 67·7	21st	° 31·7	31st	° 56·0	° 43·9	1·033	16	29·855	30·507	23rd	29·061	4th	W., S.W.
November	° 57·6	3rd	° 30·8	7th	° 48·7	° 38·9	1·870	17	30·058	30·594	21st	28·719	16th	N.W., N., N.E.
December	° 56·7	15th	° 28·3	2nd	° 48·1	° 38·9	2·482	19	29·868	30·706	30th	28·530	10th	S.W., W.
Extremes, Totals, and Means	° 79·8	Aug. 15th	° 20·2	Jan. 3rd	° 57·3	° 45·6	Ins.	Days 174	Ins.	Ins.	Dec. 30th	Ins.	Dec. 10th	N.W., W., S.W.
					51·5°									

JOHN WILLIAM MOORE, B.A., M.D., Univ., Dubl.; F.R.C.P.I.;
F. R. Met. Soc.

PERISCOPE.

COCAÏN POISON.

To counteract the poisonous effects of cocaïn given hypodermically, M. Gauthier combines it with solution of nitro-glycerine. His formula is as follows:—Distilled water, 10 grammes; hydrochlorate of cocaïn, 0.20; 1 per cent. solution of trinitrin, 10 drops; mix and make a solution.

FORMOL.

THE value of formol in 1 in 20,000 solution as a bactericide has been reported in many journals, and just when we are coming to believe in its virtues, M. Schmidt assures us (*Répertoire de Pharmacie*) that formol as a germicide in less than 1 in 100 is useless, and that a solution of formol of that strength acts as a powerful caustic, resembling a deliquescent solution of caustic potash.

OXYGEN.

M. VILLON has been conducting a number of experiments with oxygen gas on wines, alcohols, and oils. Brandies and wines submitted to this treatment acquired the flavour which time alone was credited with producing. Atomised wine injected into a vapour of oxygen gas acquires a rich, mellow flavour, which it had not previously known.—*Répertoire de Pharmacie*, No. 10.

MURIA PUAMA.

MURIA PUAMA, a Brazilian plant, credited by the natives with having well-marked aphrodisiac properties, is introduced as an addition to our already long list of new remedies. Gall found the alcoholic and aqueous extracts to act as excitants to the spinal cord; but in nine cases treated with the fluid extract by Kleesattel no aphrodisiac effects were noticed.

PHENATE OF COCAÏN.

PHENATE OF COCAÏN is recommended by von Oefele as superior to the hydrochlorate of cocaïn in that it is antiseptic and soluble in alcoholene.

TRIONAL.

KEPPERS, in a thesis read this summer at Würzburg, draws the following conclusions from his experience of trional:—It is a rapid hypnotic, especially useful in mental excitement. The headache which occasionally follows on its use quickly disappears. Thirty grains are a full dose. Disorders of the digestion seldom follow its use. Cardiac troubles contra-indicate its use. The anhidrotic action of the chemical is very marked, three to four grains arrest profuse perspiration.

BICHROMATE OF POTASSIUM.

DR. P. HUNT recommends the bichromate of potassium as an expectorant in the capillary bronchitis of children. He gives 0.003 gr. mixed with sugar. The daily amount for a child one year old being 0.015 gr.—*Les Nouveaux Remèdes*, No. 17.

ANTISEPTIN.

ANTISEPTIN, introduced as a definite chemical compound is (*Ephemeris*) a mixture of sulphate of zinc, 85 parts; boric acid, 10 parts; iodide of zinc, 2.5 parts; thymol, 2.5 parts.

CHLORYLE.

THIS new anæsthetic is a mixture of chloride of methyl and chloride of ethyl. It is liquefied by a temperature of 0 °F. Chloryle is used in dentistry and minor operations.—*Les Nouveaux Remèdes*, No. 17.

GLANDERS.

T. K. GRAVELSKY reports two cases of recovery from glanders. The inflammation was localised on the hand, and after incising the abscess he prescribed frictions of mercurial ointment to the amount of a drachm daily.—*Les Nouveaux Remèdes*, No. 17.

INFLAMMATION.

IN a paper read at Heidelberg, Professor Unna (*St. Louis Medical and Surgical Journal*), thus defines inflammation—"A tissue injury (progressive or retrogressive, exudative or merely nutritive), occasioned by the issue of an exudate from the blood-vessels as a result of the presence of a chemotactically active body in the tissue."

ANTISEPTIC POWDER.

R. BORIC ACID, 70 parts; iodoform, 25 parts; salicylic acid, 4 parts; essence of eucalyptus, 1 part. Mix intimately.

BENZO-NAPHTHOL.

F. KUHN, in a paper read before the Medical Society of Giessen, sums up the therapeutics to benzo-naphthol—"it is absolutely useless, and has no antiseptic action on the intestinal contents."

THE MEDICAL WEEK.

THIS periodical is *La Semaine Médicale* in English, published in Paris. The number now before us is the 31st. The original journal has been running for twelve years, and boasts of having the largest number of subscribers in the world, issuing more than 1,000,000 copies. An edition, in Spanish is also published.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

New "Soloids" and "Tabloids."

MESSRS. BURROUGHS, WELLCOME, & Co., of Snow Hill Buildings, London, E.C., have recently introduced a number of novelties under the headings "Soloids" and "Tabloids." They have sent us samples of tabloids of compressed agathin (salicyl-alpha-methyl-phenyl-hydrazone), which is recommended as a reliable analgesic. Each tabloid contains 4 grains, and one or two tabloids may be swallowed as a dose entire with a draught of water or other fluid. Other specimens of tabloids are those of iodopyrin (5 grains in each), dermatol (5 grains) for use in persistent diarrhœa, and benzosol (benzoyl-guaiacol, 5 grains). Other preparations are:—

"Tabloids" Cubebs Comp.—At this season of the year this formula will probably be particularly useful to physicians and specialists in throat diseases. When the "tabloids" are dissolved upon the tongue, the cubebs will be found to exert a pleasant, soothing effect upon the mucous membrane, while the discutient action of the chloride of ammonium materially enhances their value.

"Soloids" of Iodic-Hydrarg.—Iodic-hydrarg. is mercuric-potassio-mercuric-iodide, and is said to possess several times the bactericidal strength of hydrarg. perchlor., as proved by experiments upon cultures of the anthrax bacillus, streptococci, and staphylococci. Being readily soluble, it is quickly diffused in the tissues. The "soloids" are very convenient for the immediate preparation of antiseptic solutions.

"Tabloids" of Iodic-Hydrarg., $\frac{1}{8}$ th gr.—Internally administered, iodic-hydrarg. has been used with success in the treatment of syphilis and infantile and other fermentative diarrhœas. Unlike other mercuric salts, it is not toxic in ordinary doses, and is promptly eliminated from the system.

Soda Mint Granules.—A very pleasant form for administering this combination of bicarbonate of sodium with peppermint, so useful in cases of acidity and kindred ailments. The granules are sugar-coated, and children, ladies, and fastidious patients will find them very pleasant to the taste.

"Tabloids" of Antipyrin, $2\frac{1}{2}$ grs., sugar-coated.—This formula has been recently added to the list, the "tabloids" being intended for administration to children, the sugar-coated form is preferred by many for this purpose.

Blaud's "Tabloids" (sugar-coated).—In these the ferrous sulphate and sodium carbonate are only mechanically combined, the double decomposi-

tion not taking place until the "tabloid" comes in contact with the juices of the stomach. The sugar coating prevents any possibility of premature chemical reaction, so that the absolutely unoxidised condition of the resultant ferrous carbonate is guaranteed. The "tabloids" are further very pleasant to take, and are quite free from the bulkiness and other objectionable characteristics of the old method of administering Bland's formula. The firm prepare also Bland's "tabloids" with aloin, and Bland's "tabloids" with arsenic, which will no doubt be found of value in the treatment of anæmia, chlorosis, and kindred complaints.

Ipecacuanha sine Emetinâ "Tabloids," 5 grs.—These are specially indicated in dysentery. *Ipecacuanha* has proved of the greatest use in the treatment of this disease. It has the power of arresting the inflammatory action of the bowel, checking the liquid and bloody evacuations, and often effecting a complete cure. Deprived of the emetic principle, the distressing vomiting which accompanies its administration is entirely obviated, and its value is correspondingly enhanced.

Lanoline Pine Tar Soap possesses marked stimulant and antiseptic properties. In irritable conditions of the skin, it will be found soothing and cleansing to the tissues, and destructive to any micro-organisms which may exist in them. It is also to be recommended for washing the hair.

Eucalyptus Oleosa is a pure and carefully rectified oil, and is said to contain 10 per cent. more eucalyptol than *eucalyptus globulus*, its bactericidal and medicinal qualities being proportionately enhanced. It is strongly antiseptic, non-poisonous, devoid of acrid and irritating properties, and possesses, moreover, a pleasant refreshing odour. For preventing the development of bacteria and micro-organisms generally; for inhalation in pulmonary affections, as a gentle stimulant, carminative and anti-spasmodic when taken internally, experience has shown that its virtues entitle it to a high place.

ERRATUM.—In the number of the Journal for December, 1893 (Vol. XCVI., No. 264, Third Series), the name of the author of a work on the "Antiseptic Dry-air Treatment of Consumption," reviewed at page 520, is incorrectly given as "John J. Hartnell, M.D." It should be "John J. Hartnett, M.D."

Prepared in Buckinghamshire.

Liquor Carnis (Caffyn). (MEAT JUICE).

THE LANCET reports again:

"This valuable food has on a previous occasion found a place in our records of analytical work. It has since been considerably improved in many respects, not the least of which are flavour, keeping properties on exposure to air, and mode of manufacture, in which it should be added, provision is made to secure the practice against all risk of infection."—THE LANCET.

SUPPLIED IN 2/-, 3/6, and 8/6
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"VIROL"

"We have made an extensive trial of
"Virol, especially amongst invalid children, and find it to be an excellent and popular form of food for them. It has an agreeable taste, and does not destroy the palate for the more ordinary aliments.
"Virol contains, in proper proportion, all the constituents of an ordinary mixed diet; it is easy of administration, digestion, and absorption, and so cannot fail to be of the highest utility in a large class of wasting disorders."—BRAITHWAITE, 1893.

THE LANCET.

LONDON] SATURDAY. [AUG. 29,

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For Analysis, see
"The Lancet,"
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(COX'S PATENT).



DATED AND SEALED
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The Registrar of Trade Marks (after giving the usual public notice prescribed by Parliament to allow of opposition) has granted us the appended **Trade Mark**, thus officially recognising us as the **original makers of tasteless pills**, and no pills will be sent out without this mark on all bottles or packages.

CATALOGUES SENT POST FREE ON APPLICATION.

These contain 800 coated and uncoated forms of different strengths, requiring not less than 3,000 bottles and jars. Many pills are now being made in imitation of ours, principally by not very scrupulous persons we formerly supplied. Inferior drugs and chemicals are used for cheapness, and the pills pass through the system unaltered. Medical men and Chemists in ordering through wholesale houses, are requested to specify

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Or direct from us, we paying postage and carriage.

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Bullock's Pepsina Porci. DOSE— 2 to 4 grains

Bullock's Acid Glycerine of Pepsine. DOSE— 1 to 2 drms.

In this preparation advantage has been taken of the solubility of Pepsine in Glycerine to produce a convenient and desirable liquid form of this valuable medicine; whilst the preservative qualities of the menstruum confer upon the Acid Glycerine of Pepsine the property of keeping for any length of time.

May be prescribed with most substances compatible with Acids.

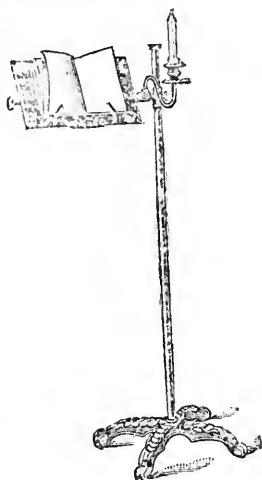
In 4-oz., 8-oz., and 16-oz. Bottles, and in Bulk.

The published experiments of G. F. DOWDESWELL, Esq., M.A., Cantab., F.C.S., F.L.S., &c., Dr. PAVY, Professor TUSON, the late Professor GARROD, Dr. ARNOLD LEES, and others, conclusively demonstrate the excellence, high digestive power, and medicinal value of the above preparations.

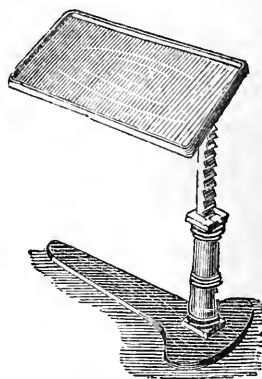
*** In prescribing either of the above preparations, it is suggested to insert in parentheses, as follows (BULLOCK).*

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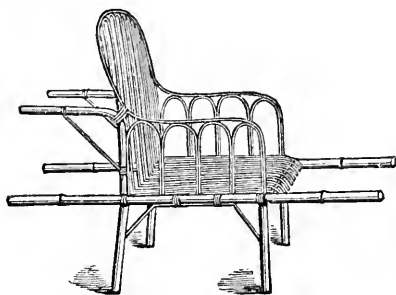
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Polished Walnut Desk	- - -	£1 1 0
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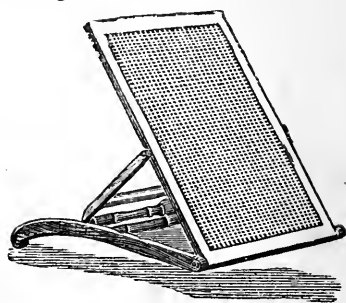
This can also be used, as shown above, as a
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This light Carrying Chair is made entirely of
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Prices - - 21/-, 25/-, 35/-, and 42/-

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From 12/6- to 21/-

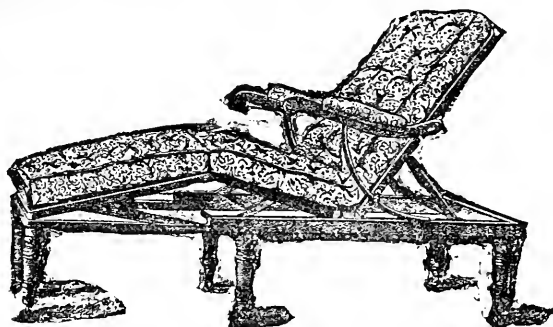
Spinal Board, £1, £1 10s.; and £1 15s.
Spinal Carriages from 8 to 20 Guineas.

} Full particulars on
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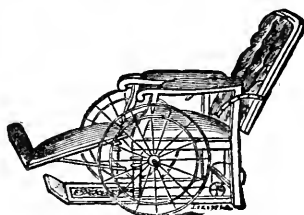
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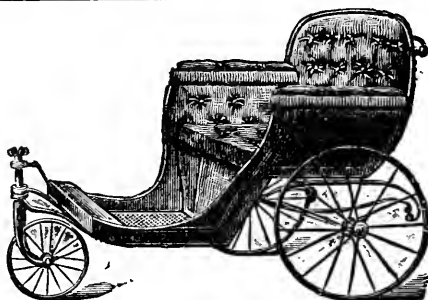
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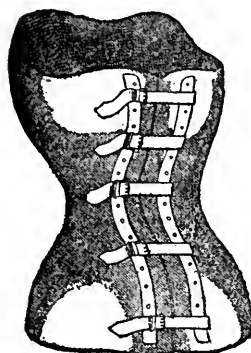
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Instructions for Measurement, &c.

JACKET (*in cases of slight deformity*).

Circumference at axilla.

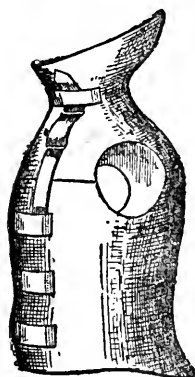
„ waist.

„ hips.

Length from axilla to great trochanter.

In severe angular cases circumference over apex of curve, position of same, and contour should be given; in lateral cases a description of the case.

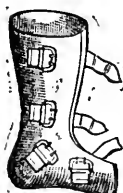
In all cases it should be stated if for male or female.



CERVICAL JACKET.

Same measurements required, and circumference at neck, and length from neck to axilla.

Any part of the Jacket can in the process of Manufacture be left Soft.



CLUB FOOT.

Circumference below knee.

„ ankle.

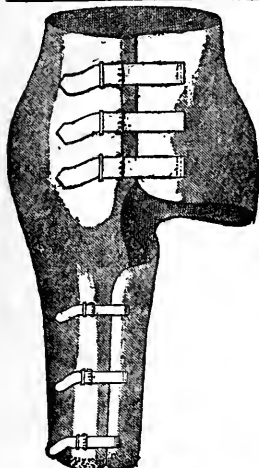
„ heel and instep.

Length from below knee to ground.

„ of foot.

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Cocking's Adaptable Poroplastic Jackets and Splints.



Instructions for Measurement, &c.

HIP SPLINT.

Circumference at waist.

" hips.

" thigh, top of

" above knee.

Length from waist to groin.

State if for right or left side.



LEG SPLINT.

Circumference at top of thigh.

" above knee.

" at knee.

" below knee.

" calf.

" ankle.

Length from groin to centre of knee.

" centre of knee to ankle.

State if for right or left leg.

When the foot-part is required, also circumference of heel and instep, and length from centre of knee to ground.

If the limb is contracted the contour should be given.

Splints are also made in Poroplastic for fracture of Inferior Maxilla, Humerus Elbow-Joint, Forearm, Thigh, Knee-Joint, Leg, Shoulder Joint, Hand, &c.

These Splints can be fitted perfectly to the Patient if softened either by hot water or in a Heater made for the purpose. When mounted with webbing, hot water will do; if with leather, a Heater should be used. The material becomes quite hard again in 10 or 15 minutes.

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The LANCET says:—"This seems an excellent extract."

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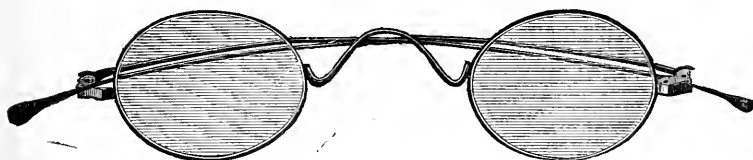
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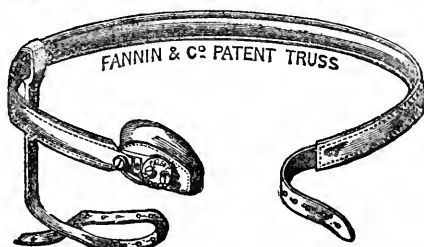
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See *Brit. Med. Journal*, Sept. 10, 1892, pages 584-5.

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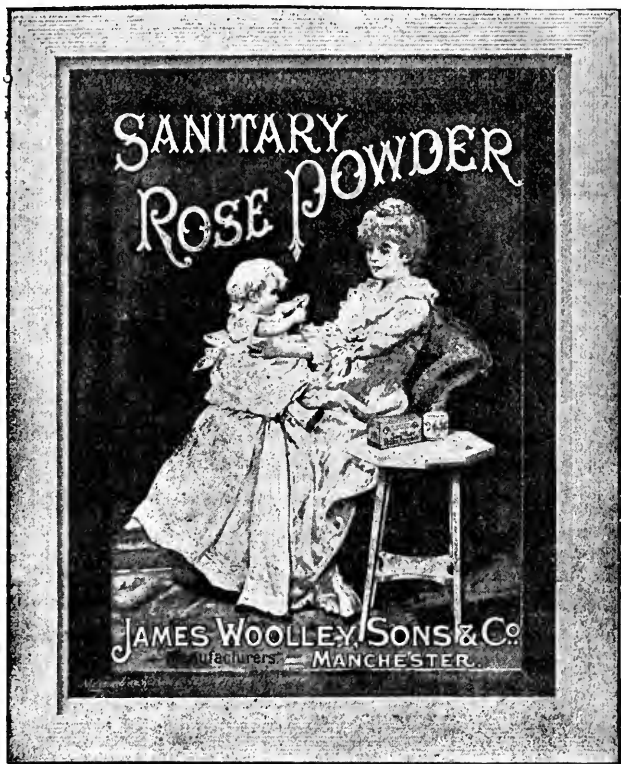
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Pulv. Saponis, aa. gr. ss.					Ext. Cascara, gr. 3-4ths						
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